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**CHERRY CULTURE****Propagation and Pest Control****Planting, Pollination, Varieties**

**C**HERRY GROWING, carried out on commercial lines, and under suitable conditions, offers good possibilities to the producer, states Mr. P. H. Thomas, Chief Horticulturist of the Department of Agriculture. The Cherry is a popular fruit and a steady demand exists for choice varieties for dessert use, whilst the trade in varieties for preserves is also increasing.

Cherries may be generally divided into two families, viz.: *Prunus cerasus* and *Prunus avium*. Both are stated to be indigenous to N. Italy and France. From *P. cerasus* our cooking and jam-making Cherries, such as Kentish, Morello, Amarelle and Montmorency, have been evolved, whilst from *Prunus avium* the "heart" or heart-shaped soft, sweet Cherries, and the "Bigarreau" or firm-fleshed Cherries have been bred.

The sour light-colored firm-fleshed varieties such as May Duke, Reine Hortense, Royal Duke, and Waterloo, are hybrids of the two species.

Most of the sweet varieties are characterised by their sleek bark and vigorous upright growth. The sour kinds have a more spreading habit, and carry smaller and stiffer foliage which appears after flowering.

Cherries generally thrive in a deep light loamy soil, which does not crack and retains the moisture during Summer. Very fine fruits are produced on suitable soils at an altitude of 700 to 800 feet, with a rainfall of 35 to 40 inches. Under such conditions particularly luscious and large Cherries of the Bigarreau type are grown. The sour varieties are of a different nature, and less particular as to soil conditions. Kentish and Morello have often been utilised to plant out steep gullies which often occur in orchard areas. These varieties under such conditions produce surprisingly good quality fruit with little or no cultivation.

**Propagating Methods.**

Varieties are raised either on the "Mazzard" or "Mahaleb" stock, although quite a number of home-grown trees have been propagated on Kentish seedlings and suckers. A good deal of controversy still takes place in regard to the merits of these stocks. "Mazzard" is a name given to the wild Sweet Cherry. Stocks are generally grown from seed, early stratification being necessary to secure germination.

The principal points in favor of the "Mazzard" as a stock are that varieties propagated on it generally de-

velop a very vigorous and uniform tree. Owing to its closer relationship to the dessert varieties, a better union is secured when propagated by the grafting or budding processes.

The trees are longer lived. "Mahaleb" botanically is not closely related to the sweet or sour Cherries. Its foliage is small and dark green in color, and at first sight difficulty would be experienced in recognising it as a Cherry species.

Cherry varieties propagated on "Mahaleb" are generally more dwarfish in growth habit, are considered harder to cold than "Mazzard," and come into fruiting earlier. Where soil and climatic conditions are not entirely favorable, the "Mahaleb" stock might be utilised, especially on poorer sandy or stony soils with a light rainfall.

**Cross Fertilising.**

**I**NVESTIGATION HAS SHOWN that certain varieties of Cherries are inclined to be self-sterile or even inter-sterile, requiring the agency of some other compatible variety to effect pollination and subsequent setting of fruits.

This is strikingly borne out by the experiments carried out by M. B. Crane at the John Innes Horticultural Institute, England. In most cases cross fertilisation gave better yields, and certain varieties were found to be distinctly compatible in this respect. Some of the varieties grown in Tasmania that are giving unsatisfactory results may require a pollinator to secure effective fertilisation.

This may be supplied either by reworking (by budding or grafting) separate limbs or whole trees in the orchard at various intervals.

Tests in regard to compatibility may be simply determined by placing a few blossoming branches of varieties that flower at about the same time in water in a container fixed in the crutch of the tree.

If ineffective pollination is the cause of the trouble the results of this test will be quickly apparent.

**Planting and Pruning.**

After planting, the trees should be trained on similar lines to those adopted for other young trees, cutting to the best placed buds on the leaders, so that the resultant growths will occupy a good position in the tree, and thus build up the framework the following year. When the tree attains the age of four years, if this treatment has been carefully followed, a strong and symmetrical framework will have been obtained, well fitted to carry the

heavy crops that may be borne in future years. From this stage onward a very light thinning is suggested, the leaders being left unstopped, and only those growths which are superfluous or interlocking being removed. This treatment will tend to produce a large crop of blossom buds, and satisfactory crops of high quality fruit should be borne in the sixth or seventh year.

The Cherry bears the majority of its fruits on small spurs that form on the main limbs and branches of the tree.

These spurs make slow growth and are very long lived, fruiting regularly for a number of years. When showing weakness or sterility they should be removed during the annual thinning and shortened back to a new spur formation that at this stage often makes its appearance at the base of the lateral. The sour Cherries generally have a different habit of growth to the sweet varieties, being more of a pendulous nature. If the young trees that are planted are headed in the nursery to a height of two feet six inches or over, and care is taken in the subsequent pruning to train the tree as upright as possible, cultural and harvesting operations will be facilitated. The Morello Cherries are somewhat of the same type of growth, and possess a different habit of bearing, the majority of the fruits being borne on the young wood of the preceding year's growth.

With these varieties harder cutting is generally practised, with the object of obtaining an annual supply of new wood.

Recent experiments which have been conducted into period pruning indicate that the best results are obtained by treating trees during the Autumn. This is said to be particularly advantageous with certain of the Bigarreau type, the gumming to which they are susceptible being not nearly so prevalent.

**Manures and Cultivation.**

Cherries benefit particularly by applications of nitrogen, and will not be commercially profitable where soils are deficient in this plant food. Green cropping, especially with leguminous plants, is generally beneficial. If this is supplemented with light dressings of phosphates and potash, a satisfactory programme should be arrived at.

Cultivation is more important. The Cherry has a comparatively short growing period. The crops are harvested in the early Summer. If irriga-

tion is not available every opportunity should be taken to conserve the soil moisture, so that the fullest benefit may be obtained from the natural supply.

**Pest Control.**

**T**he Pear Leech.—This pest is most troublesome in some districts, but may be easily controlled by weak applications of arsenate of lead (1 lb. to 25 gallons) paste. Should the fruit be ripening, good results may be obtained by nicotine sulphate, pyrethrum, or Derris root products.

**Black Aphid.**—This pest has only recently appeared in Tasmania, and where allowed to go unchecked, has caused serious damage.

The aphid over-winters on the bark in the egg form, and control is best affected by the application of ovicidal sprays. Oil emulsion or tar distillate sprays 1-12 applied just previous to bud burst generally result in a satisfactory control. Some growers, to make doubly sure, apply a nicotine spray after the petals have fallen, to kill any insects hatching out and surviving the Winter treatment.

**Varieties.**

Growers have a large selection to choose from, but observations narrow the choice to the following varieties: Dessert—Early Red; Belle de Montrœuil, Bigarreau, Twyford, Early Lyons, Early Purple Gear (dark red). Early Black; Tartarian, Bedford Prolific, Burgdorf's Seedling. Late red; Florence, Bigarreau Napoleon, Noble. Late Black—St. Margaret, Bing, Black Republican. Processing — Morello (Kentish), Montmorency, May Duke.

Bigarreau Napoleon, besides being a splendid dessert variety, is also, by reason of its firm white flesh, one of the best preserving kinds.

**APPLES INTO SUGAR.****Using up the Culls.**

**L**ABORATORY TESTS made in U.S.A. now prove that sugar can be added to the by-products of culled Apples. Many forms of palatable drinks have already been discovered, but sugar, if it can be obtained in a commercial way, will prove even more profitable. According to an American exchange, Apple growers and processors in Virginia have been experimenting, and find that, owing to the high cost of transportation, a profitable use can be made of cull Apples by converting them into sugar that may be acceptable to local and distant consumers.

It is claimed that Apples provide more sugar content than do sugar beets and attempts are to be made to secure a footing for Apple sugar on the local market. Already, Apple-jack, vinegar and Apple juices are being manufactured, and if sugar is found to be obtainable from Apples in commercial quantities, a new era will open for growers.

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# THE FRUIT WORLD & MARKET GROWER

A Monthly Newspaper published in the interests of the Berry Growers, Deciduous, Citrus, Dried and Canned Fruitgrowers, and Market Gardeners.

— by the —

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## Letters to the Editor

(Correspondence is welcomed from readers. We do not hold ourselves responsible for the views expressed either by correspondents or by contributors.)

### Re Export of Apples.

The Editor,  
"Fruit World."

Sir,—

The complaint of your Tasmanian correspondent as regards the conditions regulating the export of Apples, is supported by the experiences of many South Australian growers. The restrictions imposed upon the Cleopatra in particular will eliminate one of our leading and most popular varieties from the export trade, and it is considered that in this respect the regulations should, and can be modified without any depreciation of quality or appearance. One of the principal causes of dissatisfaction is the rejection of Apples with inconspicuous brush marks. This so-called blemish, unlike black spot, pit, etc., diminishes during storage, and is not noticeable when the fruit matures.

The shape of sound Apples, if not quite true to type, may influence the judge at a horticultural show, but should not affect its selling value.

It is necessary that the regulations be administered with discretion and commonsense, and not by a strict adherence to a formula, framed by an official board, without regard to varying conditions, or discrimination between varieties. Inspection of fruit for export, should be carried out as far as possible, at the packing sheds,

under the supervision of competent inspectors, instead of at the port of shipment. This would ensure a more uniform grade and better pack.

The advantage of having inferior fruit rejected before being packed, and afterwards condemned with serious loss to shipper or agent, grower and packer, must be obvious.

It is of course essential that the quality of our fruit and other primary produce sent overseas should be kept at a high standard, owing to the large and continually increasing competition from other countries. For the same reason, reduction in the cost of production, grading, packing and transport is a matter which deserves more attention from the authorities.

I am, Sir, etc.,

"CLEO."

Nuriootpa, S.A., 16/6/38.

### Organization Needed

Mr. W. J. Moffatt, fruitgrower, of Blackburn, Vic., who has travelled extensively abroad, writes to the Editor urging better organisation among growers. He urges the extension of the co-operative packing house movement, putting up a standard pack to improve marketing. Only by effective organisation, states this contributor, can growers make their weight felt when dealing with shipping and marketing problems.

### PERSONAL

#### QUEENSLANDER VISITS MELBOURNE.

#### Choice Apples Wanted.

A visitor to Melbourne during May was Mr. A. Martin, of A. S. Barr Ltd., of the Fruit Exchange, Brisbane. During his visit he inspected many fruit districts in this State. Mr. Martin stated, in an interview with our representative, that there were good prospects in Brisbane for late varieties of choice Victorian Apples.

Mr. Martin is a member of the Apple and Pear Publicity Committee in Queensland, and while in Melbourne he investigated the plans for the publicity campaign for Apples now being conducted in Victoria. He was able to report back to his committee upon the methods being adopted in the Southern States, and the gratifying results which he had seen.

#### VETERAN FRUITGROWER PASSES.

##### Pioneer Orchardist of Batlow.

The death, on June 21, of Mr. O. C. Barberie, brought to a close a long life of service to the fruit growing industry in New South Wales. The late Mr. Barberie was the first orchardist to foresee the possibilities of the Batlow district as a fruit-growing centre, and he saw it grow from a mining area known as Reedy Flat to a prosperous fruit and Potato growing district.

A Victorian by birth, he was later a school teacher at Reedy Flat, but being convinced of its possibilities for fruit growing, he resigned from the Education Department and took up virgin country which he converted into an orderly orchard. In the early days he had to cart his products some 40 miles to Gundagai, which was then the nearest railway station.

Now Batlow is an important fruit centre, has hydraulic electric power, and a cool store capable of handling Batlow's present yield of 150,000 cases of fruit annually.

## APPLES FOR SHEEP.

## Using Up Low-Grade Fruit.

It is reported that during the recent drought conditions when hand-feeding of stock had to be resorted to owing to dearth of grass, farmers collected windfall Apples and saved their low-grade fruit for feeding to their stock. Graziers in the Harcourt district reported that their sheep seemed to thrive on an Apple diet.

Two benefits arose from this expediency, since the orchardists got rid of their culled fruit at some recompense, and also lessened the danger of Codling Moth harboring in the fruit on the ground. No one wants a repetition of extreme dry conditions but, should such occur, it may act as a hygienic provision if the stock grower and the fruit grower co-operate in a similar manner.

**U**NLIKE THE MAJORITY of Peach varieties, the J. H. Hale Peach is rather selective in its habits, growing only to perfection under certain climatic and soil conditions, says Mr. J. A. Ballantyne, at the Bathurst Experimental Farm in a recent issue of the "N.S.W. Agricultural Gazette."

Of all varieties grown in that State, the J. H. Hale is the only one known to require inter-pollination to enable it to set and mature and crop satisfactorily. Proper pruning, says the writer, ensures satisfactory crops of high quality fruit and economical costs of production.

The mistake is frequently made when training Peach trees to add continually to the number of leaders and sub-leaders year after year, and just as long as the tree is making suitable growth, so the leaders and subleaders are increased in number and length. The time eventually arrives when the tree is making little growth, laterals

are sparse and weak, and frequently the crop has to be borne on spurs. When this happens with the J. H. Hale tree, a reduction in quantity and quality takes place immediately.

A well-developed healthy Peach tree of this variety in full bearing cannot be expected to carry any more than an average of about six half-cases of good quality fruit. Experience has shown that this crop can be carried on from six to twelve limbs at the most. If the district will maintain a six half-case crop per tree, and this crop can be easily carried on, say, nine healthy limbs, then why develop a tree with perhaps twenty limbs and dozens of sub-leaders?

To pack an average of six half-cases per tree of J. H. Hale Peaches, averaging, say, sixty fruits to the half-case, and working on a basis of five fruits per lateral (after thinning), it simply means that each tree has to carry only about seventy well-developed laterals, or roughly about

ten per limb. In addition to limitation of the number of limbs, another point is limitation of height of those limbs. Under the conditions in which the J. H. Hale is growing in the Bathurst district, limbs, generally speaking, need not exceed 10 feet in height; in fact, the majority of the growers favor a tree considerably lower than 10 feet. Once the limbs have reached this height they are not allowed to grow any further, but are cut back every pruning to an outside, or suitable, lateral growth, which in turn is left long or unheaded. It will be found, consequent upon limitation of limbs, eradication as far as possible of sub-limbs or subleaders, and limitation of height of tree, that the trees will annually send out and develop the strong laterals so necessary for the production of quantity and quality in J. H. Hale Peaches.

The elimination of surplus limbs and limitation of their height means easier and quicker pruning, thinning, picking, etc., and a saving on the spray bill. One grower claimed that his costs of production were halved.

Once the tree has produced sufficient strong laterals for the carrying of the crop, and in addition a similar number to be cut back for the following season's crop, then the surplus strong laterals and all weak laterals and spurs can be completely eliminated. Weak laterals, when cut, beget weak laterals, while strong laterals when cut back result in strong laterals being forced out.

To repeat the operations briefly. Develop a tree of sufficient size to carry crops suitable for the district.

Obviate growing a tree having sufficient limbs and leaders, etc., to carry twelve cases, if it is known that the district and soil is such as to limit the carrying capacity to four cases only. As regards treatment of laterals on the J. H. Hale Peach tree, the best results have definitely been obtained with the "long" type of pruning, shortening the bearing laterals back very little and only where they exceed a length of perhaps 2 feet, or are in such positions as to be unable to carry Peaches along their whole length without damage, bruising, etc., to the fruit. In cutting back laterals which have carried fruit, leave at least one well-developed bud, even if it means seven or more inches of stub being left.

In the case of young J. H. Hale trees pruned on the limb limitation system, there is little need for worry if the stubs remaining after pruning are few, for it is usually found that these strong laterals can not only carry and mature the required quantity of fruit, but in addition they throw out several good strong lateral growths which can be utilised the following year.

A hefty youth tendered a penny to the conductor on a Liverpool tramcar and asked for a scholar's ticket.

"Did you say scholar's?" asked the conductor.

"Yes."

"Righto! Here you are." Then, as an afterthought, "Remember me to the wife when you get home!"

## PEARS AND PEACHES FOR PROFIT

FIRST-CLASS trees for 1938 planting. Good stocks of all varieties, including—

**PEARS** (for canning and local market)—Bartlett W.B.C. For export—Bosc, d'Anjou, Hardy, Comice, Josephine, Packham's Triumph, Winter Nellis, Winter Cole.

**PEACHES:** Brigg's, Golden Queen, Peregrine, Hale's, Pullar's Cling, High's, Salway, Zerbe, etc.

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## Pruning the J. H. Hale Peach

## Elimination of Surplus Limbs



## Control of Pests and Diseases of Fruit

### SHOT-HOLE IN STONE FRUITS

#### Bordeaux Spray Will Control

"SHOT-HOLE" of the foliage of stone fruit trees may result from the operation of one or other of several different factors. These factors may be of a parasitic or non-parasitic character, and amongst the former are included several different fungi and also certain bacterial organisms.

*Clasterosporium carpophilum* is prominent amongst the fungi capable of causing shot-hole in the foliage. Also, it is usually the cause of the severe fruit scab which occurs from time to time on various stone fruits, particularly Apricots and certain varieties of Almonds. It is only in certain seasons that shot-hole scab on Apricots is severe or general, and under these conditions it is usual to find little or no evidence of the foliage symptoms. On many Almond varieties, however, shot-hole scale occurs rather consistently.

The most characteristic feature of fruit infection is the raised brownish scab which ultimately tends to flake off, leaving a discolored mark on the skin. A discolored depression may or may not be evident late in the season, depending on the amount of size-increase in healthy tissue surrounding the affected area, or the entry of secondary organisms. Scab on Almonds is frequently accompanied by an abundant exudation of gum.

Satisfactory control may be obtained by applying Bordeaux mixture (6-4-40) plus an efficient spreader at the following periods:

- In the Autumn when the final leaves are falling.
- In early Spring when a trace of petal color is apparent in the swollen blossom buds.

High spray pressure and a good cover of spray on all parts of the tree are essential for success in controlling the disease.

### DIE-BACK IN APPLE TREES.

#### Several Causes Noted.

THE LIFE of the average Apple tree varies in different geographical areas. It is probably three times as great in Tasmania as in Queensland, and the disease constitutes the main cultural problem in N.S.W., W.A. and Queensland.

A survey of the incidence and relative importance of the diseases which cause "die-back" and "sour sap" in Apple trees was recently made by the C.S.I.R. The survey covered orchards in the main Apple-growing centres of New South Wales, Victoria, South Australia, Western Australia, and Queensland, and showed that:

(1) Fungal roots, such as *armillaria mellea*, wound parasites, such as *polystictus versicolor*, malnutrition or lack of fertilisers, and loss of surface soil by erosion, are factors which cause "die-back," but vary in incidence and importance in different localities, and rarely constitute the most frequent causes of "die-back" in any district; (2) Inadequate soil drainage is responsible for approximately 20 per cent. of the "die-back" in nearly all districts; (3) in Victoria, and, to a

lesser extent, in New South Wales, injury occasioned by the Apple root borer is a very prevalent and important cause of tree decline; (4) the most important and widespread type of "die-back" is that known as pruning "die-back" in Western Australia, and rosette or "little-leaf" in Queensland and South Australia.

This disease, the cause of which is at present unknown, is developed in all districts north of latitude 36 deg. S., becomes severe north of latitude 35 deg. S., and, generally speaking, increases in severity as one goes northward. It appears to be closely correlated with, and the main factor determining, the longevity of the Apple tree under Australian conditions.

#### RESEARCH STATION WANTED.

#### New England Growers Act.

A recent report from Inverell, N.S.W., states that at a conference of fruit growers from the Northern Tablelands it was decided that a research station in that area should be established to enquire into local deficiency of chemicals in the soil, pest control and improvement of the quality of fruit grown. Delegates attended from Kentucky, Arding, Armidale and Inverell.

### Sooty Blotch of Citrus

#### Control by Spraying.

Sooty Blotch, caused by the fungus *Leptothyrium sp.*, is characterised by irregular, diffuse, black blotches on the rind of the fruit. It is confined to coastal areas, and is, in general, a relatively minor disease, but in the warmer coastal districts sometimes results in very appreciable loss through lowered sale value.

Sooty blotch occurs only on the fruit and is to be distinguished from Sooty Mould, to which it bears a somewhat close resemblance. However, it never develops the dense, thick, crustose fungous sheets characteristic of Sooty Mould, and the black blotches which do develop may only be rubbed off the surface of the fruit under considerable pressure. Also, Sooty Blotch is quite independent of scale insect infestation, and is most severe on sheltered fruits borne in the interior of the trees.

The only damage from Sooty Blotch is the disfigurement which is produced on the rind. It is partly removed during washing and brushing operations in all packing sheds where preservative processing is practised, and workers in South Africa have shown that it may be completely removed simply by dipping the fruits for from 30 to 60 seconds in a 5 per cent. bleaching powder solution.

In orchards in which heavy Sooty Blotch infection has developed, it is found that almost absolute control of the disease can be obtained by application of a single Bordeaux mixture or lime-sulphur spray in Autumn (April-May).

Lime-sulphur should be used at a dilution of 1 in 40, the Bordeaux mixture at 6:6:80:1 strength.

As an example of the degree of control obtainable, states an article in the "N.S.W. Agricultural Gazette," the following results may be quoted from an experiment at Lisarow in 1932 on six Washington Navel Orange trees in each of two adjacent rows, the one row being sprayed with Bordeaux oil in early April and the other row left unsprayed.

Tree.	Control		Sprayed	
	Row.	Row.	Row.	Row.
1 . .	96% infection.		12% infection.	
2 . .	99 "	"	5 "	"
3 . .	100 "	"	20 "	"
4 . .	98 "	"	7 "	"
5 . .	96 "	"	32 "	"
6 . .	100 "	"	24 "	"
Average	98 "	"	17 "	"

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### Power Sprayer

— Keeps the Mixture in the barrel as even at the end as at the beginning of Spraying. —

Information with pleasure.

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Victoria

### NEGLECTED ORCHARDS.

#### Mortgagor Bank Fined.

For failing to take measures for the treatment of diseased fruit and for having failed to have waste and fallen fruit destroyed on land held by the bank at Narara, N.S.W., the Commercial Bank of Australia was fined £15, with £5/9/- costs, at Gosford on June 2.

The Bank submitted that its ownership of the land had not been proved, and that the State Rural Bank, which owned more land, could not be proceeded against in this direction. The Department of Agriculture took action in the interests of the fruit industry and as a warning to others.

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Arsenate of Lead—Quality Stands Alone.

We can supply all your Spray Requirements—ARSENATE OF LEAD (Paste or Powder), SPRAY SPREADER, SPECIAL COPPER MIXTURE, LIME SULPHUR, WHITE OIL, NICOTINE SULPHATE, RED OIL, Etc.

Extract from "BETTER FRUIT," March, 1937, by Dr. R. L. Webster, Entomologist, State College of Washington, Pullman; CODLIN MOTH COVER SPRAYS—"Ever since the imposition of an arsenic tolerance in 1926, and even before that time, investigators have been testing other materials which may be used in place of lead arsenate. Following all these intensive and extensive investigations lead arsenate appears to have certain inherent qualities which place this material foremost as an insecticide for codlin moth control."

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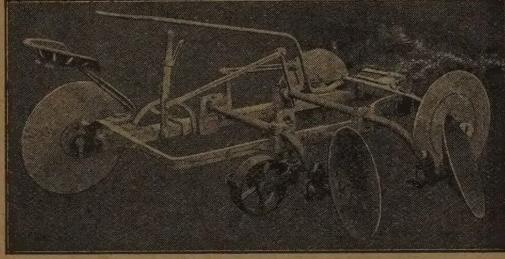
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## LEAF CURL OF STONE FRUITS.

### Timely Spraying Advised.

In the latest issue of "N.S.W. Agricultural Notes" is discussed the control of Leaf Curl. Failure to spray at the correct time will undoubtedly result in serious defoliation of the trees, but the new growth of leaves may still be facilitated by a light application of a quickly acting fertiliser such as sodium nitrate.

Leaf Curl of stone fruits is readily controlled by spraying with either Bordeaux mixture or lime-sulphur at Winter strength, but it is most important that the trees be sprayed during the dormant period—in late Winter, just before the buds begin to swell. Later applications are of absolutely no value in control of this disease.

It is rarely necessary to make more than one application of spray, but in districts in which cool and moist weather is usually experienced in the Spring, two applications may be given—one before the buds swell and the second when the flower buds are showing color.

Bordeaux mixture has been found to be slightly more effective than lime-sulphur under conditions which favor extensive development of the disease.

Although tar distillate ovicides, which are used for control of Peach Aphis, have reduced the amount of Leaf Curl infection, in some cases these sprays are not as effective against Leaf Curl as Bordeaux mixture or lime-sulphur.

Every effort must be made to ensure that the spray reaches all portions of the tree, and particularly the extremities of the small limbs and twigs.

### Annual General Conference

#### Fruitgrowers' Federation of N.S.W.

THE annual conference of the N.S.W. Fruitgrowers' Association was opened by the State Governor, Lord Wakehurst, on June 22. Growers from all parts of the State attended, and a lengthy agenda was considered.

Amongst the highlights discussed were the N.Z. embargo on certain Australian fruits into the Dominion. The President, Mr. J. Heane, stated that this important question had become a political bogey, but he was hopeful that the conferences between the Commonwealth and New Zealand Governments would result in satisfactory agreements.

The Royal Commission at present investigating the fruit industry would result in certain improvements being effected to the benefit of growers. As would also the movement in regard to improvements anticipated in the Sydney market, concluded Mr. Heane.

Several amendments to the constitution of the Federation were approved, including the division of the State into eight districts. A resolution was also passed that a research station be established in the Northern Districts, and that the C.S. and I.R. be asked to continue experiments at the laboratory of the University College of New England.

A reduction of railway freights, and a flat rate for fruit carried on passenger trains was also approved. The giving of notice, by the Department of Agriculture, of pest infestation and diseases, or of probable infestations was also recommended. The State Government is to be asked to subsidise further experiments in the

control of black spot on citrus trees as well as for the control of insect pests.

Conference also urged the co-operation of all growers in the matter of splash spraying for the control of fruit fly. Delegates considered that the continuance of the bounty on citrus fruits exported should be continued for three years so that growers could make adequate arrangements in advance for overseas marketing. It was decided to recommend to the Federal Government that the bounty to users of fertilisers should be altered to the rate of 12½ per cent. on the purchase price.

In commenting upon fruit fly experiments, Mr. W. B. Gurney, Entomologist, stated that five different varieties of parasites had been imported and bred from and progeny distributed in all growing districts, but warned growers of the necessity of clearing their orchards of fallen fruit every day instead of every week. The conference decided to lodge an emphatic request for the Fungicides and Insecticides Bill to be presented to the earliest date.

Export inspections were discussed at length, and it was agreed that fruit passed for export by local inspectors, if shipped without delay, should be subject only to final inspection for quality.

At the resumption of the conference on June 24, the Acting Minister for Commerce, Mr. Cameron, announced that a Bill would be introduced for a bounty on citrus fruits exported to New Zealand. The bounty would be 2/- per case for the first year, 1/6 in the second year, and 1/- in the third year. During this period, he stated, growers must improve the conditions in the industry, and must recognise that Government cannot continue to pay bounties indefinitely. The question of the lifting of the New Zealand

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embargo on Australian Cherries was being negotiated, but certain obstacles had been encountered.

Conference decided to urge upon the City Council the necessity for modernising the fruit and vegetable markets. Delegates advocated a limitation on the number of agents similarly to that of the Banana industry.

A special resolution was carried to the effect that backyard orchards are imposing a serious burden on commercial orchardists who honestly try to control pests and diseases, and urged the Department of Agriculture to take more serious steps to enforce inspection and take any action necessary to protect the industry.

Mr. J. Heane was re-elected President and Mr. E. E. Herrod reappointed Secretary, The Board, now limited to eight members, consists of Messrs. A. S. Brown (Central Coast), A. W. Tonking (Central Tablelands), P. W. James (Cumberland), F. B. Mackenzie (Hawkesbury), K. H. Todd (Irrigation Areas), H. A. Stevenson (North Coast), J. M. Ballantyne (Northern), and W. C. Dickenson (Southern).

### LUNGS AND LABORATORIES.

Interesting Booklet for Fruitgrowers.

"Lungs and Laboratories" is the title of a booklet issued by the Vacuum Oil Company Pty. Ltd. In this booklet the leaves and bark are referred to as the "lungs and laboratories" of the orchard, and attention is directed to the economic significance of leaves and bark, and the estimable value to horticultural communities of a regular and comprehensive oil-spray programme.

The booklet is well got up and nicely illustrated throughout, and will be of considerable interest and value to all fruitgrowers.

# Artificial and Green Manures

## Manurial Requirements

ALTHOUGH FRUITGROWERS generally recognise the value of applying artificial manures to their soils, there are radical differences in the method of application, with a corresponding lack of definiteness, says Mr. Frank M. Read, M.Ag.Sc., Chief Inspector of Horticulture, Victorian Department of Agriculture.

During the last decade there has been a marked change in the character of the manures used in Victoria. Approximately £100,000 is expended annually by the horticultural industry on manures, and whereas ten years ago the emphasis was largely on phosphatic fertilisers, it rests now more strongly on nitrogen.

Nitrogen has caused a definite response in many places on soils of the sandy or gravelly type, which are usually low in this constituent, but it has not shown a consistent significant influence on heavier types of soil.

Lime seems to have produced no consistent response in trees under conditions which produce very marked responses in legumes and other crops.

Phosphoric acid, even in soils known to be comparatively low in that element, does not seem to have had anywhere a significant effect on the growth and yield of most fruit trees, certainly not Apples.

Potash, until recently, had shown no remarkable effects on fruit trees, but since the war, as a result of the research work of the Long Ashton Station at Bristol, it has been established as an essential on many areas in England, and attention has been directed to it in other parts of the world. In America the use of potash has not yet been established on a definite basis, and the same may be said of Australia, although the opinion is growing that we may yet find, with better methods of use, a place for it.

The yearly ploughing under of a liberal amount of green stuff is a first essential in orchard management.

### Symptoms of Deficiency.

In the case of Apples the experiments conducted in this and other countries enable the appearance of the trees to be used as a fairly accurate guide to the exact fertiliser to be added in each case of faulty growth. Lack of nitrogen results in very restricted growth, reddish bark, small yellow-green leaves, which develop bright yellow tints before falling and fall, particularly at the base of the tree, very early.

Lack of phosphoric acid under experimental conditions, although it has never been noted in the field so clearly as in the case of nitrogen, results in poor growth, small and very narrow dark-green leaves, with a tendency to develop purple colored margins. These leaves usually develop very bright tints before falling. They tend to defoliate very early, and bud burst in the Spring is usually very delayed. Dying of buds is very prevalent.

Lack of potash does not restrict growth apparently as much as either of the former two, but renders the leaves susceptible to severe scorching around the margins and the development of a flat green color throughout. It also causes early defoliation from the tips of the shoots on which marginal leaf scorch has been pronounced. This deficiency is apparently very widespread in England, and occurs occasionally in the field in Australia.

### Importance of Balance.

One of the most important developments of recent years has been the

## Importance of Balance

conception of balance in fertilisers, and it appears probable that the balance existing between the various nutrients present in the soil is more important by far than the actual amounts. As an instance, let us consider Leaf Scorch of Apple leaves, to which we have referred as a symptom of potash deficiency. Strictly speaking it appears to be a symptom of bad balance between nitrogen and potash, and it may be corrected by either increasing the potash or by lowering the nitrogen. In certain cases in England the trouble has been corrected more rapidly and more efficiently by simply allowing the grass to grow beneath the trees, and so lowering soil nitrogen, than by applying to the soil quite heavy applications of sulphate of potash. Several other cases of balance have also been studied, and sufficient is known to support the view previously expressed that balance is a most important consideration.

In practice this is reflected by the great increase in the use of complete fertilisers, and the compounding of these mixed fertilisers along lines which make them much more truly balanced than the type of complete fertiliser to which horticulturists were accustomed, up to, say, ten years ago, or even less.

### General Recommendations.

There is still room for research and improvement of these mixed fertilisers, although the variation in soil conditions from orchard to orchard, and district to district, will make necessary for a long time to come a fair degree of approximation. In Victoria the use of complete fertilisers is on the whole recommended, except in cases where a definite deficiency is established by careful observation. For instance, where tree growth is very poor indeed, and leaves are small and yellowish, a nitrogenous fertiliser such as sulphate of ammonia or nitrate of soda may be used alone for a time until the trees improve. Again, if leaf scorch of Apples were to occur seriously the use of potash alone would be desirable until such time as this symptom of potash deficiency had disappeared.

Where soil humus is maintained in the manner described previously, the most satisfactory type of fertiliser to use is the readily soluble, quickly-acting form applied either in Autumn for the benefit of the greenstuff, or in Spring, two or three weeks before bud burst, for the more immediate benefit of the tree.

Nitrogen, in the form of sulphate of ammonia; phosphoric acid, in the form of superphosphate; and potash, in either the sulphate or muriate (except in the saline areas where the muriate should not be used) should, singly or in combination, supply the needs of most orchards. All of these, of course, will not be needed in every case.

The quantities of fertiliser to be applied will vary with tree size, and the following suggestions refer to medium-sized trees:—

For Autumn broadcasting or drilling in with the green crop, superphosphate of sulphate of ammonia should be used at the rate of 1 to 2 cwt. per acre, in accordance with the conditions previously discussed.

For Spring application to deciduous trees, 3 lb. of 2:2:1 mixed manure, which contains 2 parts of superphosphate, 2 parts of sulphate of ammonia, and 1 part of sulphate of potash is to be recommended, except when growth is very restricted and leaves are yellowish. In such cases 3

## Large Leaves do not Necessarily Mean Large Fruit

Large leaves do not insure the production of large Apples, because leaves are produced earlier in the season than is the full growth of the fruit, argues "Better Fruit."

There is, however, a close relation between the common size of the leaves and the common size of the Apple. Those Apple varieties that have large leaves usually produce large fruits, and the ability to produce large leaves indicates also the ability to produce large fruits.

Large leaves are the result of rapid, vigorous growth, but small leaves require nearly as much time for their development as do large leaves on a tree of the same variety. Hence the large leaf is a result of a characteristic rapid growth in the tissues of the plant, and this characteristic normally results in the development of large individual fruits.

lb. of sulphate of ammonia is to be preferred for a year or so, until growth improves.

Citrus trees, on general results so far obtained, would benefit from 3 lb. of sulphate of ammonia just before Spring growth period, and again just before the main Autumn growth.

### Methods of Application.

Having decided on sound lines that one or more artificial fertilisers are required, the grower is still faced with problems of great magnitude, for it does not necessarily follow that by applying them to the soil they are actually caused to be absorbed by the tree's roots. In fact, it is certain that very little of the fertiliser applied is so absorbed, even under the most favorable conditions. There are several reasons for this. Firstly, the root system of the average orchard tree is situated in a zone some distance from the surface, and the fertiliser must penetrate to this zone through a blanket of surface soil. During its progress nitrogen tends to be rapidly absorbed by the roots of the surface-growing plants, but is otherwise able to move downward without much obstruction.

Phosphoric acid and potash, however, move downward only with great

difficulty. Chemical reactions rapidly convert the soluble phosphoric acid into an insoluble form, and the potash, particularly in those soils in which potash is necessary, is absorbed by the clay particles very rapidly indeed, and held there in a form no more available to the tree than much of the potash previously in the soil. It is important therefore that in applying fertilisers, they should be placed as deeply as possible, either by being broadcast and then ploughed under immediately, or by being placed in deep furrows.

In short, every means at the orchardist's disposal should be used to place the fertiliser in the actual effective root zone. From this point of view irrigation water, or liberal falls of rain, are of the greatest importance, and should be fully exploited to wash down soluble fertilisers.

### Summary.

1. The lack of a definite manurial policy on the part of many growers is a cause of monetary loss to the industry.
2. The provision of ample humus is a pre-requisite of orchard soil fertility in Victoria.
3. The grower should base his manurial practice on the appearance

# "VALLO" TAR DISTILLATE (Ovicidal Wash)

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of his trees, and not on the crops they bear.

4. Lack of each fertiliser gives rise to characteristic growth features.

5. Balanced manuring is essential, balance being more important than the actual amounts of fertilisers present. In this respect a good deal of approximation is still unavoidable.

6. Readily soluble types of fertiliser, such as sulphate of ammonia, superphosphate, and sulphate of potash are preferred to more slowly available forms.

7. Autumn applications for the benefit of greenstuff may be either 1 to 2 cwt. of sulphate of ammonia or superphosphate, depending on conditions which are discussed.

8. Spring applications should be made two to three weeks prior to bud burst of deciduous trees, and for medium-sized trees should consist of 3 lb. per tree of either 2:2:1 mixture or sulphate of ammonia.

9. For citrus, 3 lb. of sulphate of ammonia in Spring, and again in Autumn, is good practice.

10. Owing to the danger of fertilisers being fixed by the soil before they can be absorbed they should be introduced, if possible, into the actual root zone by deep ploughing, or by irrigation or rain water.

11. At best artificial fertilisers can be only a subsidiary measure to those items of sound soil management, which keep the soil in good physical condition.

## VICTORIA

### Goulburn Valley Fruit Notes

ON Thursday, June 2, a meeting of Goulburn Valley fruit-growers was held in the Returned Soldiers' Memorial Hall, Kyabram, to meet Messrs. S. J. Perry & Co. to discuss with them the possibility of renewing the contracts with growers of export Pears for a further term of seven years. The present contract expires in 1939. Mr. J. G. B. McDonald, M.L.A., occupied the chair. It was stated that in 1932 34,000 cases of export Pears were grown in the Goulburn Valley, while in 1938 the total had grown to 100,000 cases, and in another five years, it was estimated that a total of 350,000 cases would be reached. To handle the huge increase satisfactorily, extra cool store space would be necessary, as well as increased facilities for handling and packing.

The report was favorably received by all present, and further meetings will be held to finalise details of the new contract.

Cool Stores for Kyabram.

Approval has been given for the erection of another block of cool stores, including four new chambers

at the Kyabram Co-operative Fruit Preserving Company's cannery. Two seasons ago five chambers and an engine house were erected, and last year the wooden walls of the cannery were replaced by brick and extended.

A case-making factory and administrative offices were also built.

Mr. T. McMaster Smith and Mrs. Smith sailed for America in the "Mariposa" on June 21. Mr. Smith, who is the factory manager of the Kyabram Co-operative Preserving Co., is making a special trip to California to study the latest methods of fruit canning and to gain first-hand knowledge of canning fruit culture in the States.

Welcome rain fell in the Valley on June 15, when 100 points were registered after a long protracted spell of dry weather. The fall was very timely and was of great assistance to farmers and graziers generally.

Pruning is in full swing in Goulburn Valley orchards and good progress is being made. The weather has been favorable for outside work, with no lost time through wet weather.

W.B.C. Pears are looking particularly well for next season's crop, but

with Peaches and Apricots there is a shortage of good fruiting woods. Peaches and Apricots carried heavy crops last season, and coupled with a dry, hot Summer, had a weakening effect on the trees, so that only a medium crop can be expected in the coming season.

### SOUTHERN FRUITGROWERS' ASSOCIATION.

18th Annual Conference, Box Hill, July 7.

The eighteenth annual meeting of the Southern Fruitgrowers' Association will be held in the Town Hall, Box Hill, Victoria, on July 7, when Mrs. Clarence Weber, M.L.A., will perform the opening ceremony.

Mr. J. B. Mills will address the conference upon the "aspects of fruit marketing in Australia."

Included in the business presented will be the taking of a vote on the open hours at the Victoria Market, another matter considered will be the sale of large fruits by count, other matters will include neglected orchards, doubtful sprays, sales at sports grounds, research work and the election of officers for the coming year.

The annual report to be presented covers some of the above questions as well as a report on the Oriental Peach Moth, the enforcement of the Saturday afternoon closing regulation, reduction of water charges, census of fruit and vegetable sales, Departmental reports on exported fruit, and results of research work.

Mr. F. G. Beet is acting Chairman and Mr. J. W. Aspinall is secretary of the Association.

### GOSFORD REPORTS INCREASED PROFITS.

At the annual meeting of the Gosford (N.S.W.) Co-operative Packing House Ltd. held on June 1, a net profit of £1,159 was reported, as compared with a net profit of £39 for 1937. The Board of Directors was reduced to three members and Messrs. W. C. Kelly, F. Davidson and C. G. Stimson were elected.

A recommendation was forwarded to the Minister for Commerce reading "Owing to the prospects of a heavy citrus crop, growers in the Central Coast area are alarmed at the marketing position unless a renewal of the export bounty is granted."

## Winter's spray makes Summer Pay!

You will have received by now the latest contribution to the Australian Horticultural Industry by Vacuum Oil Company — the booklet, "Lungs and Laboratories." Its contents will have proved of much interest to you. You will have learnt that it DOES pay to spray with Gargoyle RED in the dormant season. Let the experiments detailed therein save you the need to experiment.

Order your Gargoyle RED NOW  
and spray on a sunny day as near  
... to bud burst as possible ...

# Gargoyle RED Spraying Oil

# APPLE PUBLICITY

## SUCCESSFUL EDUCATIONAL PROPAGANDA

### Remarkable Success of Apple Week in Melbourne

THE Commonwealth Government this season made available £2,000 to the Australian Apple and Pear Council to conduct an Apple Publicity Campaign. As previously, owing to climatic and other considerations, publicity activities were concentrated in New South Wales, Queensland, South Australia, and Victoria. There was a modest expenditure in press and radio advertising, with more attention this season to educational propaganda activities.

These State Committees functioned in providing gifts of Apples to schools, hospitals, kindergartens, creches, and charitable institutions, and at the same time addresses were given on Apples and health, together with the distribution of suitable literature.

Apart from this direct method of publicity there were accompanying press photographs and paragraphs.

The Brisbane Committee was organised by the Committee of Direction of Fruit Marketing, in co-operation with the Wholesale Fruit Trade, special attention being paid to the distribution of Apples to schools.

In Sydney the Joint Secretaries are Col. Herrod (Fruitgrowers' Federation of N.S.W.), and Mr. P. S. MacDermott (N.S.W. Chamber of Fruit and Vegetable Industries). Apples were distributed to schools, and addresses given to scholars; literature was distributed to retail fruiters and others and a special drive is being made during Health Week in Sydney.

In S.A. the Adelaide Committee carried on much propaganda through retail fruiters, special paper bags being provided, thus securing the whole-hearted co-operation of the trade.

In Victoria Apples were distributed to schools, hospitals, kindergartens and creches, addresses were given to scholars and literature distributed.

#### Apple Week.

One specially bright feature was the conducting in Melbourne of Apple Week from June 27-July 2. The Chairman of the Apple Week Committee was Mr. F. Petty (also President of the Cool Stores' Association). A team of voluntary helpers was organised; over 300 baskets of Apples were tastefully decorated with Apples and Pears and shown in 150 Melbourne shops. The varieties of Apples and Pears

were all named, and the displays were accompanied by suitable window cards, and the effect was most pleasing. One could not walk a few paces along any of the main streets without seeing these beautiful Apples and Pears in shop windows, together with sprays of leaves and blossom. This was accompanied by generous press publicity in the way of photographs, cartoons, news paragraphs and women's pages devoted to Apple and Pear recipes.

In addition, there was a full programme of wireless talks by Members of Parliament, dentists, Departmental Officers and members of the Committee.

M. J. B. Mills, President of the Australian Apple and Pear Council, has expressed unqualified appreciation to all who assisted in this splendid enterprise. Mr. L. S. Taylor, a member of the Tasmanian State Fruit Board, was equally appreciative, as also were visiting interstate representatives of the fruit industry. Apple week was officially opened by the Acting Minister for Commerce, the Hon. A. G. Cameron, in a broadcast from Canberra.

Apart from the foregoing, articles were published in the country press throughout Australia quoting medical opinion concerning the health and food value of Apples and Pears.

It is pleasing to report that there has been an appreciable increase in the sale of Apples. The Committee has in mind the words of Professor Harvey Sutton, Chairman of the Nutrition Committee in N.S.W., that the need is for educational propaganda to change the dietary habits of the people. He states it took three years to appreciably increase the consumption of milk; that campaign, however, succeeded to the benefit of the present and the rising generation, and he was sure that the Apple campaign, equally beneficial to the people, would meet with success, by continued propaganda on educational lines.

A copy of the price list issued by Messrs. A. G. Nightingale & Co., nurserymen, of Emerald, Victoria, is to hand. This contains lists of fruit trees, ornamentals, berries, hedge plants, creepers, pot plants, etc. Special lists of roses are also issued by this firm. Attention is directed to their advertisement in this issue.

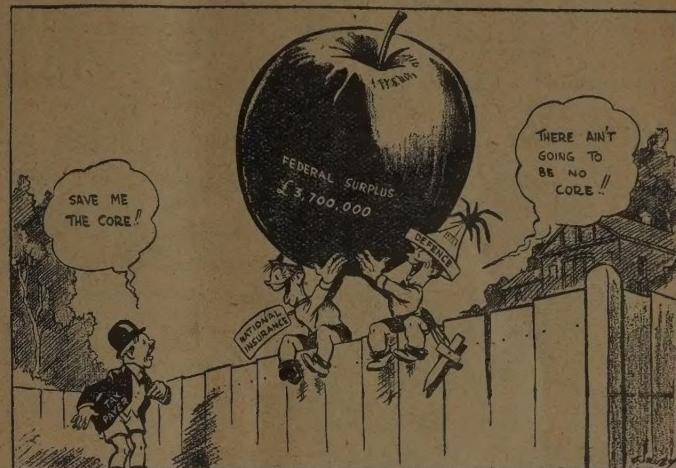
#### THE GREAT AUSTRALIAN BITE



Apple Week began in Melbourne yesterday.

Cartoon in the Melbourne "Argus," June 28, 1938.

## THE BIG APPLE



Apple Week Commenced Today

Cartoon in the Melbourne "Herald," June 27, 1938.

## UTILISING SURPLUS APPLES

### Many By-Products Possible

[The following article was prepared by Mr. P. H. Thomas, Chief Horticulturist of the Department of Agriculture, Tasmania. It raises again the importance of utilising surplus Apples to the benefit of the industry as a whole.]

ONE OF THE GREATEST problems at present facing the Apple industry is the profitable disposal of low-grade fruits. It may be said that the best way of dealing with this matter is "Not to grow low grade fruit." This may be all right in theory, but there are a number of climatic and other factors beyond fruitgrowers' control which may be responsible for its production.

With increasing production, restriction of export to popular varieties and sizes and the recent adoption of State export quotas it is evident that in future years, if normal crops continue, the proportion of unexportable fruit must increase.

The problem of economically using supplies of surplus Apples is not confined to Tasmania; other countries have been faced with a similar position to that which exists here. This has stimulated scientific research and to-day a large range of products are manufactured and find their place on the world's markets. Let me briefly review them:—

Fresh Apples, apart from their use for domestic purposes, are principally converted into dried fruit, canned Apple, glace Apple, pectin, cider, Apple liqueur, concentrated Apple juice, Apple juice (non-alcoholic pasteurised), Apple vinegar, stock food, Apple confections.

Dried Apples.—Apples are generally dried by the kiln evaporation process, the popular demand being for Apple rings. The market for this product appears to be limited, the bulk of supplies being consumed in tropical countries where transport is costly. From information received there does not appear to be much scope for increased production. Competition on overseas markets is very keen and protective tariffs limit the export to only small quantities.

Dried Apples certainly compete with the fresh product if placed upon the market at the same period, and

Pectin is a valuable aid for jams and jellies which are of thin consistency and require reinforcement in order to produce a stable product. It is also used for emulsifying certain oils, particularly castor oil and liquid petroleum, reducing the oily taste and making them more palatable.

In America it is also used as a basis for many of the popular commercial

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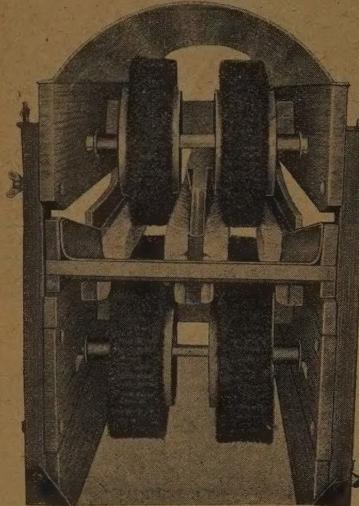
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**WITH A "DIGGER" WINCH**

**A Man can uproot more Trees and Stumps in a Day than he would dig out in Ten Days**

**QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria**

# Here is the Citrus Polishing And Grading Machine YOU Are Waiting For—



Harvey 2-Runway Horse-hair Belt Citrus Polisher.

**Daniel Harvey Limited presents the New Horse Hair Belt Citrus Polishing Machine**

The lower set of brushes traverse in the same direction as the fruit, at a given speed, and the lower side of the top brushes traverse in the opposite direction at half the speed, thus giving a DOUBLE BRUSHING ACTION.

The fruit is in FULL CONTACT with the brushes throughout the process.

The amount of PRESSURE CAN BE REGULATED by lowering or raising the top set of brushes.

The amount of BRUSHING CAN BE REGULATED by running the top brushes faster or slower.

It can be run in conjunction with your grader, or fed on to the packing bench. Built in 1, 2, 3 or 4 runway size.



THE HARVEY GRADER has many new and exclusive features, which are claimed by users to be the last word in utility and accurate sizing.

Call, write or phone your nearest distributor for full particulars.

Harvey Model 9.C.C.  
R.H. Feed Fruitgrader  
with Elevator and  
Auto. Hopper.

## Harvey Builds An Orchard Implement to Suit Your Every Requirement



"HARVEY" 3-FURROW TRACTOR POWER LIFT HB7 MOULDBOARD ORCHARD PLOW: A one-man job. Built in sizes from two to six furrows.

"HARVEY" PATENT OFFSET TANDEM DISC CULTIVATOR: Cultivates right up to the butts of the trees or vines while the Tractor is driven right out in the middle of the row. Proved to be an excellent machine for deeply cultivating heavy irrigation land.

"HARVEY" built "PETTY" PLOW: Plows out strips which have not been plowed for years. Cuts through couch grass with the greatest of ease. Also plows up to the trees and in the centre. DISC CULTIVATING GANG can be attached in place of Disc Plow Gang.

**DANIEL HARVEY LIMITED**  
Orchard Implement Specialists  
**BOX HILL - VICTORIA**

INTERSTATE REPRESENTATIVES—

N.S.W.—BUZACOTT PTY. LTD., 7-11 Market Street, Sydney.  
S.A.—SILBERT, SHARP & BISHOP, Rundle Street, East Adelaide.  
W.A.—PATERSON & CO. LTD., St. Georges Terrace, Perth.  
SOUTHERN TASMANIA—D. HARVEY LTD., Hobart.  
QUEENSLAND—BUZACOTT (QUEENSLAND) LTD., 443 Adelaide Street, Brisbane.  
S.A.—COLE & WOODHAM, Box 12, Renmark.  
NORTHERN TASMANIA—CLEMENTS & MARSHALL, 119 Cimitiere Street, Launceston.

mayonnaise and salad dressings which are at present on the market. One of the most practical uses that has been made of pectin is in the manufacture of certain types of sweets. This appears to give it great scope for development and is one of the most promising outlets for the product. Other uses are found in the baking trade and fruit juices for soda fountains.

**Juice Extracts.**—We now come to the juice extracts—cider, pasteurised juice and vinegar.

From a manufacturing viewpoint the selection of an efficient crushing and juice extraction press is the initial consideration. After the fruit has been treated the juice can be converted into any of the liquid products by the different processes, i.e., concentrated and stored for future use.

**Cider.**—Amongst those which may be classed as beverages, cider is the most important. A number of growers throughout the State are engaged in the production of this, and through their efforts a wide range of alleged ciders ranging from a near Apple vinegar to a liqueur containing up to 18 per cent. of alcohol is being produced.

The really first class ciders are made from specially selected vintage Apples which are grown for this purpose, and possess certain defined qualities and flavors for blending. In Tasmania cider is made entirely from the surplus Apples which are grown commercially for dessert and culinary purposes, and the quality of the product is limited thereby. However, recently some of the popular vintage types have been recently imported, and it should be possible with careful blending to produce a standard cider which could be placed upon the Australian markets and popularised with suitable propaganda.

**Unfermented Apple Juice.**—In the N.W. American States and British Columbia the manufacture of Apple juice has assumed considerable proportions, and a very thirst-quenching and palatable beverage is produced.

Various processes are employed. Juice is generally extracted with a cider press, it is then clarified before pasteurisation as a clean sparkling liquid is desirable.

Most manufacturers now favor a carbonated juice as this, besides improving the appearance of the beverage, also brings out the flavor more prominently and gives it the essential brisk taste.

Before commencing production in Tasmania, research work would be necessary to determine the most suitable varieties as the juices vary considerably and careful selection is necessary in order to obtain the desired type.

**Vinegar.**—Practically the whole of the supplies of Australian vinegar are obtained from malt. In U.S.A. and Canada, especially on the W. Seabord, Apple vinegar is manufactured and is a very popular household commodity. It is pleasing to the taste, can be used for practically all the domestic purposes, and processed with pickles, sauces and preserves. Here is an outlet for our surplus Apples which has received very little investigation. There appears to be no valid reason why the Tasmanian Apple growers should not participate in this trade when the qualities of Apple vinegar become known to the public.

**Stock Food.**—One of the problems encountered in the extraction of Apple juice is the economic utilisation of the pomace left after crushing. In the past the disposal of this has been difficult and costly. Besides pectin production another use has recently been developed.

A number of the plants that I recently visited when in America were

treating this and converting it into a stock food.

The process adopted is fairly simple. The pomace after being removed from the "press" is placed in a conveyor and fed into heavy rollers which crush the last vestige of juice from it. The pomace is then shredded and evaporated in a large rotary oven until it reaches a thoroughly dry granulated consistency similar to oil cake.

In this form it can be bagged and stored for a considerable period. It has a fairly high carbohydrate value. It is very useful for mixing with concentrated foods that are used for fat lamb raising. For dairy cows, receiving in addition a grain mixture, one ton of dried Apple pomace is stated to be equal to 3 tons of maize silage. As part of a fattening ration for Winter fed cattle it is also used in those countries where this practise is necessary.

It is estimated that in a season of normal yield approximately 750,000 bushels of surplus or waste Apples may be produced in Tasmania. Of this quantity fully two-thirds would be centred in the Southern districts.

Dr. Cruess, Professor of Fruit Technology at the University of California very ably sums up the position in a recent Bulletin published last year. He states "There is already in existence sufficient knowledge of new products and new uses for fruit upon which to build industries for the utilisation of surplus fruits; what is lacking is a group of growers and manufacturers, or some other group or organisation, private or governmental, that feels the responsibility for such a programme and which can and will provide the driving force required to launch the new processes and products successfully; likewise to see the job through to successful establishment of such products on the retail markets. This is practically the position in Tasmania. At present the dried and canned Apple products are fairly well established, but very little has been done with the other Apple by-products enumerated, especially unfermented Apple juice, pectin and stock foods. If it were possible for a group of growers or a private concern to successfully develop these industries on a commercial basis, besides providing employment a definite reduction in the wasted Apple surplus would take place.

There is another aspect. A large quantity of low grade or defective fruit which at present finds its way upon the local markets might be diverted to the factories, thus raising the standard and the prices of the quality product.

### THE KARRYBETTA FRUIT TRAY.

Claimed to be Boon to Growers.

Our attention has been called to a new method of packing and marketing fruits. The new method will involve a scientifically constructed storage shed which, it is claimed, will keep fruit equally well to that kept by refrigeration and with much less than half the cost.

Secondly, a method of packing fruit in small trays which fit into ordinary fruit packing cases will bring increased returns to growers at a very small increased cost and will definitely eliminate all wastage in undamaged fruit, whilst specially constructed fruit cases will reduce the cost per case by at least one penny per case.

Further particulars regarding this new method are given in an advertisement elsewhere in this issue.

# Tasmanian News & Notes

## Tasmanian Export Season Ends

**London Prices Favorable — Pruning — Export Control Board—Complaints from Sydney—Hard Weather Conditions**

(By Our Correspondent.)

**T**HE OVERSEAS SHIPPING season closed with the departure of the "New Zealand Star," on June 18. The reports from the United Kingdom markets to-day are rather encouraging from an Australian point of view, though we regret that our gain had to be purchased at the expense of the English growers, who seem to have suffered severely from weather conditions.

The unexpected demand and increase in prices for our fruit illustrates once again that the law of supply and demand is the controlling factor. On a bare market, even the less popular varieties sell at payable prices.

The prices quoted for Pears are particularly gratifying, especially as our Victorian friends have been telling us that the saturation point had been nearly reached. Owing to the fact that Pears are not such regular croppers as Apples, being more liable to injury by adverse weather conditions, it is hard to say when the saturation point will be reached and unfortunately it is the better class varieties that are the most susceptible to adverse weather conditions, hence the advisability of retaining some of the harder varieties on the export list.

The shortage of Pear space in Tasmania was a serious trouble to the end of the season as the "Clan Robertson" shut out some of her Pear cargo.

Now that the export season has come to an end, growers are turning their attention to the Winter routine work.

### Pruning.

Pruning has commenced in some orchards and ploughing is well under way in others, though in the South the wet weather has postponed it a little. As red spider was a little troublesome, a Winter spraying will be advisable in many orchards.

The moist Autumn weather favored the growth of the green manure crops and in many places they are ready to turn under. The results from consistent green manuring are very marked, the soil becomes much easier to work and increases in bulk.

There are not nearly so many Apples left in the sheds on the orchards as there were this time last year, and the cool stores have considerably less, so the mainland markets should firm up a little from now on.

### Export Control Board.

The proposal to establish an Export Control Board came as a surprise to most growers as no one appears to have asked for it. The proposal is not being received enthusiastically in Tasmania as there appears to be no adequate growers' representation on it and too much power in the hands of the Minister; in fact, the general opinion seems to be that it is a Government control scheme with a few growers on it so as to allay suspicion and inspire a little confidence while it is put through Parliament.

With better provision for growers' representation the Bill would probably meet with a fair reception, but in its present form it is simply Government control without any financial responsibility, which finds little to recommend it to the more thoughtful men in the trade.

Personally, I think those who will be affected by it should have the opportunity of voting on it before it becomes law, for, after all, it is the growers' own business, not the Government's.

Why not give the present Apple and Pear Council the powers suggested for the new Board? It is a thoroughly representative body.

Let us hope that the meeting of State representatives being held in Canberra on the 22nd will be able to get the amendments necessary to make it a Growers' and Exporters' Board, included in the Bill.

In its present form it is not acceptable to Tasmania. For one thing, the fact that the Minister is to appoint the members to represent the exporters is not acceptable, and I notice that the Governor-General may remove from office any member or members on the recommendation of the Board. This might ensure unanimity, but might kill free and useful discussion.

There is still room for improvement in certain phases of the industry, and the Apple and Pear Council have done a lot to improve conditions during the last two or three years, so why this haste to supplant the Council by what will be practically Government control (unless the Bill is amended) without consulting the growers or exporters. It seems an insult to the intelligence of those comprising the industry.

They may remember it next election, for all sections of the com-



A Northern Tasmanian Orchard, River Tamar.

munity are waking up to the fact that we are being over regulated.

### Complaints from Sydney.

Complaints are being received from Sydney that a fair percentage of Tasmanian fruit is arriving pressure bruised, this is due partly to too tight packing with an exaggerated bulge, which is not suitable to Australian transport conditions, as the handling is too rough, there is also a tendency on the part of growers to hold their fruit too late instead of sending it while in its best condition.

This tendency is partly due to the official reports which so frequently advise them to hold it back, the result is always the same, namely, a lot of off-color fruit arriving late in its season, with little life left, this is one reason why Apples are not so popular as they might be in the later months of the year, the flavor has gone and people naturally buy something else.

Let us hope the educating campaign suggested by the Apple and Pear Council will be continued on this phase of marketing.

The Tasmanian Government's representative in Sydney (Mr. Herbert McKay) is doing good work advertising Apples by free distribution to school children. By this means many of the prejudices of the general public with regard to varieties and color will be modified to the benefit of producer and consumer alike. I hope he will continue this phase of advertising, as besides benefiting the children, it helps relieve the market by direct and immediate absorption. Nothing will develop the Apple habit better and quicker.

### Weather Conditions.

Tasmania is in the grip of Winter, and we are experiencing gales, hail and snow, instead of the clear calm frosty weather we usually expect in June, however it is better to have it now than in the Spring.

The position of the small fruitgrowers is annoying; last Summer it is estimated that a thousand tons of Raspberries went to waste, and now, owing to the severe weather in Europe, it is probable that they could all have been sold.

The pie Apple business does not seem to be so brisk this year, and the evaporators had more than they could handle, so the waste fruit is still an unsolved problem.

The Mercury brand cider took about 50,000 bushels.

Agricultural pipes of all sizes are being offered in the advertisement in this issue on behalf of the Lilydale Tile and Pipe Works, Lilydale, Victoria. This business has been established for fifty years, and three years ago it was taken over by Mr. J. B. Cathcart, who put in a new plant. Pipes from these works are being used extensively in the Mildura area. Attention is directed to the advertisement in this issue.

## Tasmania—News and Notes

Hail Reduces Export :: Red Spider Prevalent :: Control Needed :: Cleaning up After Export :: School Packing Classes : Stone Fruits : Pruning :: Berry Growers' Census.

(By P. H. Thomas, Chief Horticulturist, Dept. of Agric., Hobart.)

**F**OLLOWING THE HIGHER average temperature and lower rainfall of last month, it was anticipated that a change might occur, but temperatures have remained high for the time of year, the mean being 3 deg. above average, whilst the rainfall was slightly under average. Under such conditions late varieties of fruit have matured very rapidly and orchard cover crops have produced already a good stand of greenstuff for ploughing in. The lack of windy weather resulted in a reduction in the usual loss experienced by certain of the later varieties falling or being otherwise injured. Rainfall statistics obtained from the Commonwealth Meteorologist from representative centres are as follows: Hobart, 115 points as compared with the average of 185 points; Franklin, 216 as compared with 268; Launceston, 195, as compared with 270.

The hail storms reported from the north last month were largely responsible for the last boat leaving the Tamar some 20,000 cases short, and a shortage in holdings for interstate purposes may also result. The large average size of fruit has also been responsible for many thousands of cases being left on the orchardists' hands, both in the north and south of the State.

Mild sunny weather has been responsible for high color and clear skins in late varieties, and with Sturmer Pippin particularly, bruising has been very noticeable. In many instances sound fruit of the Sturmer Pippin has arrived at the wharf stained and shoddy looking through deposits of spores and disintegrated material from the small, shrivelled, black fruits which are so common on this variety in some localities. Hollow core and pit in Cleos, and the development of late spot after picking have caused considerable trouble, and such fruit must be carefully examined prior to packing or storing. Late spot on other varieties is variable but Crofton and Granny Smith generally require the most attention in this respect.

Some growers experienced a shortage in case material towards the end of the season and a proportion of unseasoned cases have been marketed.

### Pests and Diseases.

Although red spider was prevalent this season, growth conditions were such as to render any injury unnoticeable. Nevertheless, growers will need to concentrate on Winter oil



Packing Apples at the Exeter shed of the Tamar Valley Co-op. Co. Ltd.

sprays if adequate control is to be maintained next season. The usual routine sprays were sufficient to keep black spot and light brown Apple moth well under control in the conditions experienced, whilst canary fly caused little trouble where the two recommended Spring sprays of nicotine sulphate were applied. Codling moth was once again troublesome, and infestations have not yet reached normal proportions, though less than in the previous two seasons.

#### General Operations.

With the completion of harvesting and packing, orchardists have made a start on the usual annual orchard and packing shed clean up. The collection, cleansing and storing of props, the removal of codling moth bandages, destruction of pupae and bark scraping all tend to reduce codling moth infestation and render spraying more effective. After cleaning up the packing shed, picking cases should be dipped in boiling water so that codling pupae and other diseases may be destroyed, and any waste fruit and other culls destroyed.

Although it is still early, and, in the absence of severe frosts, most trees are still carrying foliage, the

buds look particularly promising for next season, and in the north Pears are especially good.

#### Packing Classes.

With the conclusion of the rush export season a start was made on the State School packing classes, and these will soon be in full swing.

Last packing season quite a number of pupils who had attended classes, obtained employment in the larger packing sheds, and it was both pleasing and encouraging to observe how quickly they adapted themselves to commercial conditions, and took their place in the industry.

#### Stone and Berry Fruits.

The attention of Peach, Plum and Apricot growers is now concentrated on pruning, and the control of fungus pests. All orchardists whose areas suffered severely from brown rot would be well advised to remove and destroy all mummied or shrivelled fruits hanging on the trees and collect any still remaining on the ground. Burning is the most effective method of destruction, but burying deeply is also satisfactory. All spurs which still retain diseased fruit should also be removed with the fruit and any other spurs which show disease

or drops of gum exuding from the bark. An Autumn application of lime sulphur both for "shot hole" and other disease is being carried out by a number of growers as an additional protection.

Generally speaking, the main points in pruning Peaches are firstly to remove wood which has fruited and gone barren, and always to have a supply of young fruiting wood coming forward. With Plums, most varieties bear their fruit on two-year-old wood, and the grower has therefore to look two years ahead for his supply. Apricots are handled in various ways, but the aim of the grower should be to encourage short fruiting laterals and suppress unduly vigorous growths. Care must also be taken to avoid overcrowding as this will result in much dying out of spurs. Exceptions exist with all three fruits, however, and should any grower be in doubt as to how a variety should be treated, a visit from a Departmental officer can be arranged.

A compulsory census of berry fruit growers is now being taken, and circulars have been issued for completion and return this month. The object of this census is to compile a

reliable roll for general reference, with the ultimate aim of giving this branch of fruit growing separate and statutory control of the industry.

#### STRAWBERRY RUNNER BEDS.

**S**TRAWBERRY GROWING at the present time is a vastly different proposition from what it was ten years ago, when almost any area of recently cleared ground could be planted out with almost any Strawberry runners available, with the assurance of a successful and lasting bed.

There are several reasons for this; in many districts the Strawberry weevil will render the establishment of an even and lasting area impossible. In other districts leaf spot fungus, Armillaria root-rot and mildew take a heavy toll. Perhaps the main trouble, however, is virus disease, and as this is very widespread on almost all varieties, growers are advised to adopt the policy of establishing runner beds. The object of these is to eliminate diseased and faulty plants without interfering in any way with a permanent area.

A small bed of runners, taken only from the most vigorous and healthy plants available is established in an isolated, and if possible, elevated position on good soil. From October onwards at fortnightly intervals, the plants are carefully examined, and any which show lack of vigor, pale colored, yellow edged, crinkled or otherwise deformed centre leaves, are removed.

The ideal plant should be reasonably upright in habit, producing large healthy colored foliage with the individual leaflets smooth, broad and evenly serrated. Periodic spraying with nicotine sulphate in the early stages and dusting later with a mixture of Derris dust is strongly recommended for the control of insect pests and vectors of disease.

Planting at 5-6 feet square is advisable and all plants are, of course, deblossomed, as the aim is to obtain a maximum number of runners in the shortest time possible. Plants handled in this way should produce 50 or more strong runners each, after which the whole bed may be lifted and the area utilised for other purposes. —(Tas. Ag. Journ.)

#### MELBOURNE, FLORIDA.

The 3,000-population city of Melbourne, Florida, U.S.A., spans the Indian River, slightly wider than the Yarra, in the citrus belt of that State. It was named in 1876 by a former resident of Melbourne, Australia, who established the first post office in the Florida Melbourne, and induced the Postal Department to register the town in that name.

No fewer than six Melbournes appear in the U.S.A. postal directory, but the Florida Melbourne is the largest and most progressive. An exchange of greetings between the Town Clerks of the Florida and Australian Melbourne has recently taken place.

#### PLoughing of Orchard Land.

Growers, whom circumstances have prevented from giving a thorough ploughing to their land, should not neglect this operation any longer. The soil should be in the best condition possible to derive the greatest benefit from Winter rains and frosts. More especially does this apply to those orchard soils which have become compacted. Newly cleared areas, too, should be ploughed deeply and allowed to remain in the rough as long as possible. This work cannot be done satisfactorily after the trees have been planted.

Cables—Monro, London

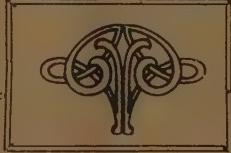
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Sales on Commission, by Private Treaty only.

Over sixty years' of Fruit Distribution.

We do not purchase.

Our Sale Rooms are the largest and most up-to-date in England; consignments are therefore displayed to the best advantage, consequently, our returns are the best.

We have specialised in the Sale of Australian Apples and Pears by expert salesmen for many years past, and we have the largest and best customers in Great Britain amongst our clients.

Bigger and better business is our objective.

We make advances to cover cost of freight, etc.

(Established 1862)

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The Westralian Farmers Ltd., Perth.

# Dried Fruit News and Notes

## BEES ON THE DRYING GREENS

"Do More Good Than Harm," says Apiary Inspector.

In all of big dried fruit settlements on the Murray in South Australia and Victoria, there is a regulation prohibiting the keeping of bees within 2½ miles of horticultural properties. This was brought into effect because of many complaints that bees did damage to drying Grapes and were a nuisance to growers, particularly when fruit was placed out on hessians.

Recently the manager of Berri Experimental Orchard, Mr. O. E. Halliday, decided to obtain an official report on the subject, and the following interesting reply has been received from Mr. A. E. Aphel, Apiary Inspector:

"The primary object of beekeeping in these and other fruit areas on the River Murray is, of course, to secure satisfactory pollination, and while the orchards provide a limited supply of nectar, which is augmented at times in some places by lucerne and clover pasture and such native timber as remains along the river, the keeping of bees in these areas is not generally looked upon as a commercial proposition.

"Incidentally, there exists a curious misapprehension that the bee-keeper profits by the depredations of bees during the fruit drying season. Actually, the reverse is the case. Bees certainly do sometimes, in the absence of nectar, become a nuisance on the fruit trays, and they do seek out the cracked or otherwise damaged fruit in the orchards and vineyards; but the fruit juices thus gathered mean disaster in hives if there are not sufficient natural stores to keep the bees healthy.

"Any observant owner of bees would be glad to remove his hives from such conditions if he had anywhere to go—and there remove the crux of the matter. To be forced to remove them out of the area would be a serious hardship, because the mallee country is the only alternative where the chances of survival are all against them, and the owner would therefore most likely be deprived of their usefulness in Spring.

"This seems to be the point requiring emphasis. In theory, these three-monthly prohibitions should entail no hardships because the owners are free to bring the bees back for the blossoming time; in practice it is usually found that there are few bees to return."

"After such an experience there would be little encouragement to renew the stocks, with the ultimate result that beekeeping would cease to exist in the area simply because the average owner has neither the time nor the opportunity to take care of bees when forced to remove them to a distance from his holding.

"The wider the area under cultivation, the further will recede the shelter for native pollination agents and the more necessary will it become that hive bees be kept, so doubtless the very men who now complain of

the presence of bees would eventually suffer also in depleted crops, since bees do not confine their attentions. On the other hand I have heard it argued that there are sufficient bees still left in trees along the river to serve the purpose. If this be the case, then the removal of the comparatively few and scattered apiaries in the area will not end the ills which are ascribed to them.

"Conceivably there may be one of two large apiaries which have caused trouble in their vicinity, and led to complaints, but in my opinion even if this be the case it is neither necessary nor fair to ban all hives for that season. The remedy is rather to see that the large apiary is distributed to some extent, for I am extremely doubtful whether just cause for complaint would ever arise from the presence of 10 to 12 hives in one place."

"Touching the general aspect of the problem, may I remark that I have observed a wide divergence of opinion as to the amount of damage caused by bees, and this divergence is sometimes borne out by facts. I recall an instance where an orchardist-beekeeper produced, year after year, tons of dried Pears of good quality in proximity of his apiary of nearly 100 hives and scarcely a bee was ever seen on the trays, while his neighbor bitterly complained of fruit sucked dry. The former ascribed his immunity to a more thorough sulphuring of his fruit—and no other explanation was apparent.

There are those also who contend that the bees are of more help than hindrance in some cases. A certain beekeeper was encouraged by neighboring vigneron to maintain a large apiary during the fruit season because they said the bees cleaned up all punctured and cracked fruit, and thus prevented mould in the bunches."

### DRIED FRUITS BOARD (S.A.).

THE South Australian Board dealt with a long agenda at its meeting held on June 20, 1938, when all the members and the Secretary were present.

The financial statement for the year 1937/8, in support of the Board's ninth report was adopted.

The notes of the proceedings of the Conference of the State Boards held in Sydney on May 19-20, 1938, were laid on the table, and the several resolutions were noted. Arising out of these recommendations the Secretary presented a report of the special meeting of secretaries held in Melbourne on June 2-3-4, 1938, on uniform legislation, and the several recommendations were dealt with.

The variations in the Acts in operation in the producing States were noted, and the Secretary was directed to submit a memorandum to the Minister embodying the provisions required in the amending Act which the Premier had intimated would be in-

roduced during the present session of Parliament.

The conclusions of the meeting of the Australian Agricultural Council held at Canberra 12/13th May, 1938, in regard to further plantings, amended legislation and the elimination of small Prunes, were noted.

Minutes of meeting of Consultative Committee held in Adelaide on June 7 were laid on the table and noted.

Chairman reported the final meeting of the Equalisation Committee, which was administering the Voluntary Trade Agreement, was held in Adelaide on June 8-9, 1938, and arrangements were made for an early distribution among the trading signatories of the amounts collected for excesses on Commonwealth sales, 1937 season's dried fruit.

Minutes of meeting of Joint Publicity Committee held in Adelaide on June 10, 1938, were also noted.

Consideration was given to packing house registrations and to the position of those packing houses which were not operating during the present year.

A report was received by the Investigation Officers of an instance of alleged unlawful trading, and it was agreed to instruct the Crown Solicitor to lodge a complaint.

An interim report by the Research Officer of the Department of Agriculture, a portion of whose salary and expenses the Board was subsidising, was received. This dealt with the problem of the production of small Prunes and pointed to the fact that the problem in S.A. was largely created by climatic conditions in the non-irrigated areas.

In connection with the River Murray Annual Pruning Competitions, the request from the Agricultural Bureau to donate £3/3/- for the Championship Trophy, was approved, and the table for the competitions was noted.

Reports of the Chief Investigation Officer on the marketing of dark Plums and of low-grade Currants, as well as the proportion of buck Currants produced in the McLaren Vale Area, were received.

### SULTANA DIPPING.

#### Experiment in S.A.

IN a paper read by Mr. A. C. Ingerson at a recent meeting of Berri (S. Aust.), growers, the writer reviewed some dipping experiments which he had undertaken. He stated that he had got the best results where a dip solution was kept at 185 deg. heat, the drying racks not more than 4 ft. wide, with plenty of rack room and fruit not laid on in layers too thickly, and given ample time to dry before being pulled off and laid out on hessians in the sun to finish off.

The speaker emphasised the fact that growers had not sufficient rack room for their Sultanas, were too anxious to take off the first lot of Sultanas placed on racks, and thus caused much of that fruit to go dark in color and so spoil a good sample, whereas if rack room had been sufficient for the whole of the crop, it

### MARKETING OUR DRIED FRUITS.

#### Board Representative's Report.

The West Australian representative on the Dried Fruits Control Board, Mr. A. Yeates, recently told a meeting of W.A. growers that the marketing of Australian dried fruits in England is conducted very efficiently, and he gave credit to the publicity department at Australia House for their good work.

#### 90 per Cent. of N.Z. and Canadian Supplies.

Australia is supplying about 90 per cent. of all dried fruits consumed in New Zealand and Canada, but even so there is a limit of about 2,500 tons per year from these markets, and therefore the bulk of the extraordinarily fine harvest realised this year must be shipped to the British market which was already taking from 30,000 to 35,000 tons of Australian fruit. From this it would be obvious that additional shipment to Great Britain must approximate some 15,000 tons, and while it was fortunate that the quality of this season's harvest was of such a high standard generally, some natural trepidation was felt as to the maintenance of present prices and in fact it was possible that there would be a carryover to the following season.

#### Sultanas are Good.

Comparing the Australian fruit with that from other countries. Mr. A. Yeates said that after a lot of trouble Australian Sultanas, although generally darker than the fruit from Greece and Turkey had definitely won a place on the British market. This was mainly owing to their generally better quality and flavor. The same could not be said of our Lexias, which did not compare with those produced in Spain.

Currants, on the whole, compared favorably with those of other countries, although he considered they would be worth at least an additional £2 per ton if they were pinned when processed and as it was only possible for the pins to be removed if the fruit was thoroughly dry it was up to the growers to see that their fruit was well dried and cured before delivering it to the packing house.

would have meant the grower having an increase very often of one or two grades more when he delivered the fruit at the packing shed door.

In the discussion that followed, Mr. Ingerson's address, many growers stated that last season they had gone to the expense of putting up extra rack room, with the latest ideas in rack building, and had already received some of the benefits that had been pointed out. Weather conditions over which there was no control played a big part in the samples, but by doing all that was possible to evade those troubles, and not prolonging harvesting, a better tonnage and a better credit balance were received at the end of the season.

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## AN EFFECTIVE ORCHARD BURNER.

An effective orchard burner for the disposal of prunings can be made from a discarded iron tank set on a wheeled framework, and its contrivance should not be difficult for a handy man. The advantages of such a burner are many, remarks the N.S.W. Agricultural Notes. It is quicker, and therefore cheaper, than carting away the prunings, and it is better for the land than drawing a heavily loaded cart through the orchard. The prunings are destroyed by the fire on the spot along with any fallen fruit, and should they be infested with any insect or infected with disease, the danger of spreading these to other parts of the orchard is lessened.

Orchard burners are also very useful in burning off roots, etc., after ploughing a newly-cleared paddock.

## Fruit Research Stations

### What Others Are Doing

The necessity for organised research in all branches of the fruit industry is recognised far more abroad than in Australia and Government Departments and co-operating stations are hard at work investigating not only propagation, and the evaluation of varieties of fruit most suitable for present markets, but their studies take in experiments in growing, carrying and processing. Two such activities are noted in a late report issued by the Council for Scientific and Industrial Research.

#### Campden, England.

The Fruit and Vegetable Preservation Research Station, Campden, Gloucestershire, England, was—established under the aegis of the Board of Agriculture and the University of Bristol, and it initiated active work in 1923 when two research workers were appointed. In 1926 a National Food Canning Council was appointed, and additional funds were provided for the Station by the Board of Agriculture and by certain tinplate manufacturers.

The problems first investigated were concerned mainly with the selection of suitable varieties of fruits and vegetables for canning, the protection of the cans by means of lacquering, the practical difficulties arising from corrosion of the tinplate by acids, and the detailed study of certain canning processes. The Station was able to render valuable aid to the industry which has expanded very rapidly.

The experimental facilities at the Station include chemical bio-chemical, physical, and bacteriological laboratories, constant temperature rooms, chilling and freezing rooms, and a room for the sampling of canned products. There is also a large experimental room fitted with machinery for the canning of fruits and vegetables. Adjoining the Station there are about three acres of land used for the growing of vegetable varieties for canning trials. The total number of the staff is fourteen.

Investigations in progress include those relating to heat resistant moulds, heat penetration in the pro-

cessing of canned and bottled fruits, temperatures of sterilization, etc. The Station has taken an active part in the extension of the National Mark Scheme to include canned fruit and vegetables. The statutory standards are based on the results of work carried out at the Station, which also conducts the official examination of cans packed under the Mark.

The information service is regarded as one of the most important functions of the Station. In addition to information and advice given in person or by telephone, about 800 technical enquiries are received and answered annually by letter. The Station keeps in close contact with industry through a Technical Advisory Committee. About 200 enquiries relating to factory difficulties are also received annually, many of them requiring experimental work and visits by members of the staff to the factories concerned. The information and advisory service is restricted to contributing members and is free.

The Station has been instrumental in establishing a large and successful industry in the canning of vegetables in Great Britain.

#### Holland.

The Nederland Central Organisation for Applied Research was established by Act of Parliament in 1930. It consists of the scientific and practical sides of the fruit industry.

Committees, representing manufacturing, agriculture, health and fisheries interests, broadly comprise the Central Organisation. The Committees recommend the research to be undertaken, the expenditure necessary and where the work shall be done. The Minister for the industry concerned has to approve the proposed research work. The cost is contributed to by Government on a pound for pound basis but, in some cases, Government bears the full cost.

The work is done in Universities, research laboratories already established for specific research and, to date, the work has not yet succeeded very far, but the organisation is such that it can be extended.

Grants to the C.S. and I.R. in England are also received from other sources. About £1,500 per annum is received from the industry in Great Britain, £75 from South Africa, which now propose to establish a Canning Research Station at Cape Town, £50 from Malaya, which also has a small station in operation while the Imperial Council of Agricultural Research of India is establishing a small experimental station in Baluchistan.

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# Cold Storage of Oranges

By Willis J. Williams, B.Sc.,  
Superintendent of Markets, Sydney.

**T**HE ORANGE TREE has been grown in the warmer climates throughout the world for many centuries. It was found in India, from where it spread to Western Asia probably before the 9th century. The fruit was cultivated in Arabia in the 10th century, spreading to Syria, then to Africa and Spain, and perhaps to Sicily, following the tide of Mohammedan conquest and civilisation. In the 12th century the Soldiers of the Cross took it from Palestine to Italy. It was commonly cultivated in Italy in the 16th century. Throughout China and Japan the Orange has been grown from ancient times.

This fruit is associated with the early history of Australia, and is grown in parts of all the States with the exception of Tasmania.

The only reference in history to this State shows that Orange cultivation was carried on to some extent in the Parramatta district, and that Oranges were commonly grown in the vicinity of the Hunter River, the early colonists choosing sheltered situations in the vicinity of creeks and rivers.

#### Growing and Harvesting.

There is not the slightest doubt that one of the fruits that require the greatest attention in the orchard is the Orange. Much more care must be used than is exercised at the present time if Oranges are to be cold stored successfully.

Care should be exercised to see that Orange trees are not watered within two days of picking. This refers mainly to irrigation areas. Experiments were conducted with Oranges that had been heavily watered prior to picking, and it was found that these did not keep for any length of time in store.

Decay sets in very easily in this type of fruit when once it has been bruised. The same care should be exercised when the fruit is being packed in boxes, and if Oranges are to be cold stored it is always much more satisfactory to have them wrapped.

#### Packing.

The life of Oranges depends in the first place on the manner in which it has been handled from the orchard to the store. They cannot be expected to keep in perfect condition if they have been picked in an inefficient manner, that is, if the fruit is bruised in any way.

The time the fruit spends in the packing shed is most important. It is here that the fruit is packed, and it might be stated that sufficient attention has not been given to the inside of the packing case. This should be just as smooth as the outside. Cleanliness in the shed should be insisted on and all apparatus used in either washing, handling and packing. The fruit should be scrupulously clean. Where Oranges are scrubbed it has been noticed that the brushes very often cause a certain amount of damage.

A vast amount of deterioration took place in fruit that was picked in an immature condition. It is so difficult after fruit has been placed in store because of its appearance to say that anything could go wrong, but it would be safe to say, that immaturity, bad packing, careless handling and overripe fruit, are the basis of so many of the subsequent troubles that occur.

#### Moulds.

There is a large loss in citrus fruits through mould. There are two types of mould—green mould and blue mould which attack Oranges whenever the skin might be broken, and this mould will spread very rapidly not only in the case but from case to case. Moulds are present in the at-

mosphere, and if the cold storage conditions are not satisfactory, mould will develop in cold store.

The main object is to see that the fruit is kept sound, and not damaged by scratching through nails or bruising. Rough handling of boxes and the careless handling in transit causes an immense amount of trouble.

#### Pre-Cooling.

Precooling of fruit is a process of reducing the temperature of the fruit as quickly as possible before it is stacked in the storage room. It can be realised that fruit that is picked especially in the Summer time, will be somewhere in the vicinity of the air temperature, and if it is kept long in this temperature or delay occurs before it is placed in the cold storage room, then the ripening goes on to the disadvantage of its keeping qualities.

Oranges are probably the most difficult to precool on account of the thick skin on the fruit, and in precooking this fruit, plenty of air space should be used between the cases, and it is advisable, if possible, to use a room in which there is an air circulation. Precooling of fruit such as Oranges is essential.

Apart from precooking fruit for storage there is also precooking for transport by either ship or train. The advantage to the ship of precooked fruit is a great saving of power, the heat of the Orange is removed and a certain amount of carbon dioxide carried off the fruit. Precooling prevents hot fruit being placed on fruit already cooled, a condition which often causes moulds. These advantages are obvious, and eventually it means the saving of wastage which is a saving to the producer and consumer.

Much the same can be said when fruit is precooled for carriage over rail. In a hot climate like Australia the advantage is immediately apparent. Experiments have been made showing very definitely that precooked fruit carried over rail roads and placed in store is kept for a much longer period.

Just as with other fruits, the writer advocates most strongly that Oranges should be precooled. The air temperature of the fruit should be removed before being placed in the cool room where it will be kept for some time.

The object of precooking, of course, is to have fruit or other produce, lowered to its chilling temperature in the most efficient way. Precooling is not used as extensively as it should be. The producer has not realised that the small cost of precooking will add greatly to the value of his produce and prevent to a large extent premature decay.

#### Cold Storage.

It is noticeable that Oranges are prone to develop bitterness, and a brown stain in storage and it has been proved that this stain or spot which appears on the skin of the fruit develops quicker at the lower temperature, especially if the fruit is kept as low as 32 degrees. On the first signs of this stain or spot the Oranges should be removed from store, otherwise the appearance of the fruit will be spoilt very quickly.

The brown stain is known as Orange scald or pitting and may even develop under the best of conditions when temperature, ventilation and circulation of the air is all that can be desired. In one test it was proved that when the fruit was wilted for three days no scald or pitting occurred.

A test was made with Oranges wrapped in tissue sulphite and waxed papers. The tissue wrapped fruit certainly kept better than the waxed.

Wrapped fruit kept better than the unwrapped samples.

Wrapped fruit kept very much longer and better than unwrapped especially those wrapped in ordinary tissue paper, waxed paper seems to suffocate the fruit and decay sets in much quicker.

#### Mandarins.

Very little has been done in the cold storage of Mandarins but, from time to time, experiments have been conducted by the writer to ascertain what can be done regarding the keeping of this class of fruit with the aid of refrigeration.

There is not a demand for Mandarins as there is for Oranges. While the demand does not exist at the present time there is not the slightest doubt that there had been a great deal of planting of Mandarins in Australia and it is well to be prepared in case a demand is made later on.

Mandarins of the Emperor and Scarlet variety have been tested and have kept fairly well up to five weeks, in a temperature of 35 degrees, but in a temperature of 40 degrees it was found that they kept for seven weeks.

The selection of Mandarins for cold storage must be very carefully attended to and on no account should any "puffy" fruit be placed in store. Also consideration will have to be given to fruit that has been grown during a very wet season, or fruit that has come from a very wet district. This should be avoided, as in the case of all citrus fruits.

The best keeping Mandarins for storage are the Thorny. Generally speaking it is thin skinned and a well packed fruit with a decidedly pleasing flavor.

The fruit must also have matured (the sugar content which develops on ripening stands lower temperature better), be well colored and of course, under no consideration must it be over-ripe, and picked in the same manner as Oranges.

Storing Mandarins the same care must be exercised as is used in Oranges. They must be stored separately away from other fruits.

It is quite safe to say that providing care is used in selecting the fruit for cold storage and the temperature kept evenly at 40 degrees F., the Mandarins should keep in store for a period of eight weeks.

Provided the humidity is steady and kept at 78 to 80 degrees, then there should be no sign of mould on the fruit nor any loss in weight. One of the difficulties in storing Mandarins is that it is a fruit that will very easily lose weight. The color of the skin will deepen slightly in store, that is, provided the fruit has not been picked too green or over-ripe.

#### Post Cooling.

Post cooling can be defined thus:—Produce which has been in the cold storage room, is placed in the post-cooler for approximately 48 hours, and the temperature is in the vicinity of 55 to 60 degrees. The produce is spread out in this room and, after being therein for the period stated, the temperature of the produce rises to that of the room which is in closer proximity to the outside air temperature than the temperature at which the produce has been kept in cold storage.

Sweating, which is so common to all produce when taken from a low to a high temperature, is prevented. The paper in which the Oranges are wrapped becomes very wet and this dampness spoils the appearance, and again it has been proved that Oranges taken direct from cold stores do not keep nearly as well as Oranges that have been put through the postcooler.

Once the public realises the advantage of postcooling, this practice will become general. It has taken a great number of years for the merchants to realise the advantage of scientific methods in the handling of produce. There is, however, a tendency to-day with the merchants to make greater use of the scientist and by so doing is assisting the public to have a much better article. The life of Oranges after they have been taken out of store, is not very long, and any method that can be used that will lengthen this period, will be of great benefit.

#### Summary.

1. Oranges must be picked very carefully using clippers to cut them off close to the stem.
2. Oranges must be well colored, decidedly firm when packed for cold storage, and on no account be bruised.
3. Fruit dipped or sweated still showed mould growths, and it is doubtful if these methods are of any value.
4. It is essential to precool Oranges. The same fruit should be taken from the cold storage room and placed in a room of about 35 degrees for a couple of days before being placed in the cold storage room.
5. The best temperatures at which Oranges can be kept is 38 deg., while Mandarins kept better at 40 degrees. The right humidity being between 78 and 90 degrees.
6. Care must be exercised to see that Orange odours do not permeate the works.
7. Post-cooling has proved an advantage in that Oranges so treated keep for a longer period out of store than those not postcooled.

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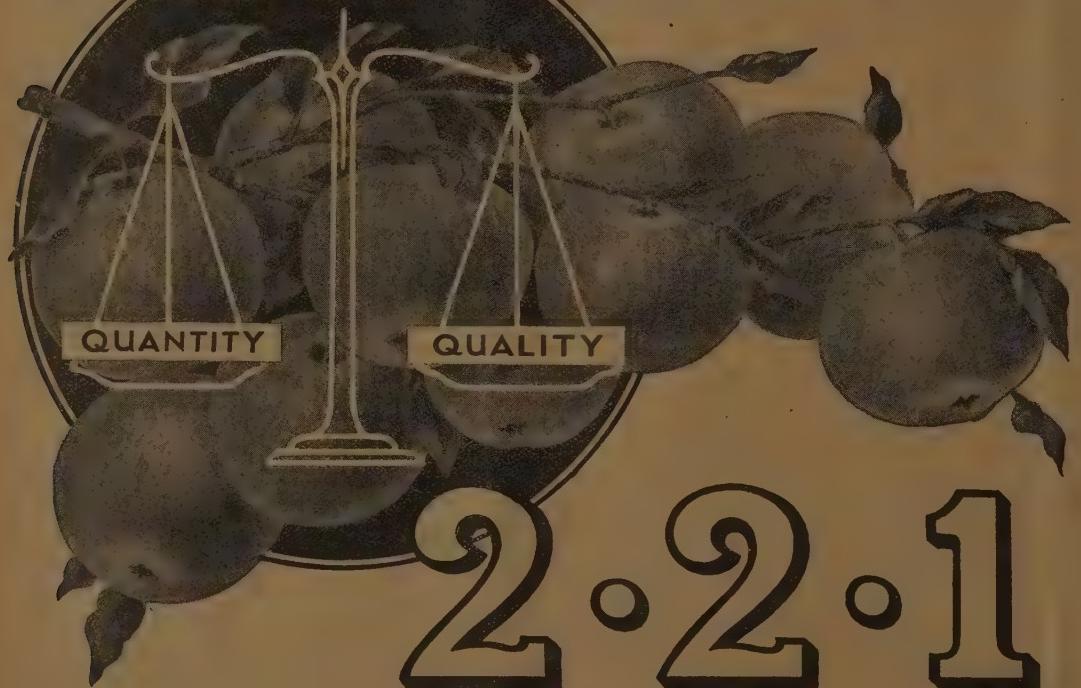
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## Cold Storage of Fruit

### RAPID INCREASE IN N.S.W.

#### Do Not Store Too Long.

THE provision of facilities, in New South Wales, for the cold storage of fruit, especially of apples and pears, has increased very rapidly during the past few years, claims Mr. H. Broadfoot, Fruit Instructor, in the Agricultural Gazette.

Generally speaking, excellent results have been obtained. There is no better way of preserving Apples and Pears in a wholesome condition than by cold storage. In addition, the period of supply is extended, there is an increased demand, supplies may be regulated, there is a lessening of waste, and the carriage of fruit for long distances, despite adverse conditions, is made possible by the use of cold storage.

#### Don't Store Too Long:

There is a tendency on the part of some growers to hold fruit in cold storage too long and when it is removed it breaks down quickly. Fruit has only a certain life under cold storage conditions and that life varies with the variety concerned. The life of a Williams Pear, for instance, is approximately eight weeks, whereas the life of a Winter Nellis Pear is about six months, that is, if the fruit has been picked at the correct degree of maturity and held under satisfactory cold storage conditions. The storage life recommended by the Department allows for a reasonable time for the fruit to reach the consumer after removal from the store.

If, however, the fruit is held in cold storage for a longer period than is recommended for the variety, it will break down quickly after removal from store, and the Apple or Pear will not develop the flavor characteristic of the variety. Fruit marketed under these conditions is very damaging to the trade, and is likely to bring about, in certain quarters, a strong dislike for cold stored fruit. During the latter part of last year, large consignments of fruit arrived in Sydney, mainly from other States, which had completely broken down and was useless to the trade.

#### Other Factors.

Generally speaking, if the cold store is operated upon proper lines, very little loss will occur, always provided that the fruit has been picked at the right stage of maturity, handled carefully, and that growing conditions were satisfactory. It is common knowledge that fruit harvested from young trees, and also from old trees which have borne light crops, does not keep as well in cold store as fruit harvested from matured trees carrying normal crops.

When aiming at maximum length of storage life for any variety, size of fruit is an important factor. Small and medium sized Apples will, generally speaking, keep longer than large fruit. It is not so much the size in itself that counts, as the forcing which induces the size. Apples may, of course, attain a good size and hold for the maximum period for the variety.

#### Granny Smith Apples.

Prompt storage of fruit after harvesting is essential in order to obtain maximum storage life of Apples and Pears. There is, however, one exception—Granny Smith Apples. This variety, if intended for long storage, should be picked at the correct picking stage and left in well-ventilated stacks for from two to four weeks. Fruit produced in hot districts, such as the Murrumbidgee Irrigation Area, should not be held longer than about two weeks, whilst fruit produced in

(Continued on page 23)

# THE MARKET GROWER

OFFICIAL ORGAN OF VEGETABLE GROWERS' SOCIETY OF VICTORIA, THE KOONDROOK & BARHAM TOMATO GROWERS ASSOCIATION AND THE SOUTH AUSTRALIAN FRUITGROWERS' AND MARKET GARDENERS' ASSOCIATION.

## Vegetable Growers' Association of Victoria

### Report of June Meeting

#### Cultivation and Planting.

**A**T the June Committee meeting of the Vegetable Growers' Association of Victoria, the Secretary reported that a petition signed by growers from all the Onion growing centres had been lodged with the Minister for Agriculture, asking that a poll be taken to determine whether the Onion Board and Pool should carry on or be disbanded. The Act says that the Board shall be in power for not less than two years, and after the expiration of this time a poll may be taken if a petition signed by the requisite number of Onion growers is lodged with the Minister of Agriculture.

The number of names required to demand a poll is 50 per cent. of the first two hundred on the roll, and 5 per cent. of every additional hundred, and, as there are thirteen hundred names on the roll, this requires a petition of one hundred and sixty names. This number was far exceeded in the petition which has now been lodged. The required qualification to be on the roll is that the grower shall have planted two acres of Onions in the previous season, and the Minister has stated that if the petition is in order, a poll will be taken, it will then be up to the Onion growers to record their vote in whichever way they think will be most beneficial to them.

On the surface, the pool does not look very attractive, for last season the Board's operations resulted in the loss of £60,000, for which amount they are indebted to the Commonwealth Bank, and this season, up to time of writing, growers are receiving only £1/7/6 per ton for the Onions they have delivered to the pool. Unless further substantial payments are made to growers, it would be better to revert to the old system of selling, when the grower took the good with the bad, and one balanced the other.

As things stand at present the consumer is paying a lot too much. Onion prices have been fixed at from £6 to £8 per ton for some time, as at Colac, and there is about £1 per ton to add to this before a merchant handles the produce.

A high price for produce is alright if there is a scarcity, for this is the method of stringing out the supply, but, when there is an abundant supply, there is no reason or sense in having the price at such a high level that the consumer cannot purchase the product freely. The Vegetable Growers' Association has been the chief mover for the petition, for it is generally felt that as the pool has now operated for two years, that growers should now be given the opportunity of voting on this system of marketing, which is something quite new in the way of selling as far as Onion growers are concerned. Growers should know by this time whether they like the system or not.

The annual meeting of the Vegetable Growers' Association takes place on July 5 at the Moorabbin City Hall. All growers are urged to attend. Members of Parliament who represent vegetable growing districts are expected to be present and supper will be provided.

Mr. Field, M.L.A., has given notice of his intention to bring forward a private Member's Bill to have vegetable growers, within a radius of 25 miles of the G.P.O., brought under a wages award, but the general opinion is that this district does not cover a wide enough area, and that the award should cover vegetable growers wherever they may be.

#### Cultural Hints.

All crops which have now established themselves, should be top-dressed. Cabbage and Cauliflowers should have a liberal dressing of ammonia which will keep the color and growth in them during the short cold days. Lettuce and Onions also need attention, but the dressing should not be so heavy on these crops, and on the Lettuce great care that neither ammonia or soda touch the leaves should be taken for either of these manures will burn the leaves badly if allowed to come in contact. In speaking of ammonia and soda, I mean sulphate of ammonia or nitrate of soda.

With Onions, a light dressing should also be given, but two light dressings of about half a cwt. to the acre, about four weeks apart, are better than one dressing of double this quantity. Ammonia or soda will not burn the leaves of Onions but, if applied in heavy dressings, will affect the roots of this crop.

Now that the days and nights are cold, plenty of attention must be given to the working of crops. All big crops, which a horse can be driven through, should be scarified, and the smaller crops must be hoed or scuffled. This working is a great assistance to crops, and will keep the ground mellow. It is not advisable to work the land while it is raining for, at this time of the year, when the atmosphere is damp, working in the wet tends to run the land together. It is also unwise to plant on a wet day during this and next month. Seeds which are sown during the next month should be planted very shallow as there is quite enough moisture to bring the seed up, and if planted too deep, the seeds have difficulty in getting through.

This month (July) is a very safe month to plant many seeds, and Carrots, Parsnips, Beetroot, Lettuce, are all very good for planting. They will start off well and invariably make a good crop.



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Parsnips planted now are a specially safe crop, and in many country districts could be planted with great success for cow feed, as the Parsnip root is a great milk producer, and when planted in rich ground, will grow to a large size.

Aphis and grubs in Cabbage and Cauliflowers must still be watched, and if any sign of these pests is showing a dusting will be necessary for these crops will not flourish if the heart is not clean.

Early Potatoes may now be planted in any district which is not too subject to frosts. A good way to get this early planting up evenly is to use the two sets of the crown of the Potato, the rest of the Potato may be used a fortnight later.

## The Early Tomato Crop

### Points in Seed Bed Work

**T**HE ABILITY of a Tomato grower can always be judged by his work in the seed bed.

The raising of seedling Tomatoes for the early crop takes place during the Winter or early Spring period, which is definitely out of season for Tomato growing. The grower of such seedlings must, therefore, be in a position to regulate artificially any variation in the weather so as to create a set of conditions in the seed bed comparable with the natural growing conditions of the Tomato.

In districts where frosts are experienced, growers must resort to hot beds in order to obtain a satisfactory germination of the seed and development of the seedlings. In more temperate climates, such as the North coast districts of N.S.W., however, it is only necessary to protect the seed bed and artificially trap the light and heat of the sun, in order to gain sufficient warmth for the healthy growth of the plants.

#### Types of Seed Frame.

The essentials of a seed frame are:

1. It must have a roof to protect the seedlings from rain in wet districts.

2. It must have the whole northern side of the frame and roof so constructed as to allow the sun to shine uninterruptedly right on to the plants.

3. The bed itself must be of sufficient height to have the seedlings above ground level, as the air is cold at ground level.

In cases where a bottom heat is required in order to obtain a germination, the seed bed should be at least 18 inches in depth.

#### The Heating Material.

The heating material can be placed in the lower portion of this bed, and the seedlings raised in soil above the heating material. The heating material may consist of any organic matter which will ferment and heat. Excellent beds may be seen filled with green crops, weeds, horse manure, or poultry manure.

Many specialists these days realise the irregularity of temperatures created by naturally fermenting organic matter, and have resorted to heating by electric resistant cables, hot water pipes or even hot air pipes.

In districts of temperate climate, small oil burning stoves or lamps are sometimes placed on the protected seed bed at night in order to counteract the outside cold conditions.

Other growers have resorted to glass frames for the trapping of heat during the day time and placing a heavy canvas or bag covering over the glass frame at night in order to conserve day temperatures.

These seed beds may thus be of a wide variation of types, and various methods may be used for heating. The financial position of the grower is usually the governing factor in the type of bed used.

#### The Soil for the Seed Boxes.

**M**ORE IMPORTANT than any other item connected with the growing of early Tomato seedlings is that the seed must be sown in soil which has not previously grown Potatoes, Tomatoes, or allied crops.

Three months before seeding time, growers should start preparing the soil for seed beds. An ideal mixture consists of one load of sand, one of cow manure, and one load of fertile loam. This mass should be kept damp and turned over at regular intervals in order that a well-decayed and sweetened soil will result.

It is important that no forcing material, in the form of poultry manure or nitrogenous fertiliser, be incorporated.

The only artificial fertiliser worth while is a light dusting of superphosphate, which will stimulate the root growth in the seedlings and help to balance the plant food in the soil.

The best growers place the soil in

(Continued on Page 18).

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# Pest and Disease Control

## PEA AND BEAN WEEVILS — TOMATO STEM BORER.

By Science Officers of N.S.W. Department of Agriculture.

### Pea and Bean Weevils (Bruchidae).

**B**OTH THE LARVAE and adults of these Weevils may attack Pea and Bean seeds in the field or in storage.

#### Control.

Infested seed should be fumigated with carbon bisulphide in an airtight box, tank or drum, using the liquid fumigant at the rate of 5 lb. (approx. three pints) to 1,000 cubic feet of container, or 1 fluid ounce (two tablespoonsful) to 16 cubic feet. The carbon bisulphide may be poured over the seed or placed in a saucer or pot on the top. The seed should be fumigated for twenty-four hours and then spread out on an insect-free surface to dispel the fumes. Fumigation

twenty-four hours, as the germination of the seed may be affected. The fumes are highly inflammable, and consequently no light of any kind should be allowed near where fumigation is being carried out.

Flaked naphthalene mixed with the seed at the rate of 1 oz. per bushel prevents infestation and will protect lightly infested seed from further damage. The naphthalene should be mixed well through the seed. As naphthalene decomposes the seed should be examined every six to eight weeks, and a little more of the substance added to replace what has been evaporated.

A useful method of storing clean seed is to use a sound barrel, open at the top, and to cover the seed with a 2-inch layer of air-slaked lime. Stout muslin bags will also protect clean seed from infestation.

In recent reports received, lime is recommended for the protection of French Bean seed against Weevil attack, 2 lb. of finely powdered air-slaked or hydrated lime being mixed thoroughly with 100 lb. of seed. The eggs of the Bean Weevil are laid loosely amongst the seed, and lime or any other fine inert dust mixed with the seed prevents the larvae on hatching from entering the seed.

In addition, any adult Weevils occurring amongst the seed are killed.

Sodium fluosilicate at the rate of 1 lb. to 1,000 of seed is also recom-

mended for the protection of Beans against Weevil attack. This material is poisonous, and should be used only on Beans intended for seed purposes.

The Weevil in Cowpea seed is a different species from the one in Beans, and has been found more difficult to control. Cowpeas should be treated with lime at the rate of 1 lb. to each 2 lb. of seed; whilst the sodium fluosilicate is recommended for Cowpeas at the rate of 1 lb. to 500 lb. of seed.

## THE TOMATO STEM BORER

(*Phthorimaea plaesiosoma*, Turner.)

**T**HE STEM BORER of Tomatoes attacks the plants close to ground level, burrowing within the stems from 6 to 8 inches above ground to an inch or so below. Infested plants wilt and die, usually when about 2 feet high and when the second or third truss of fruit has set.

The Stem Borer is a caterpillar, the moth of which lays small white eggs singly on the foliage or stem shortly after the plants are transplanted. The eggs hatch in from seven to eleven days, and if the plants are young and tender, the caterpillars burrow straight into the stems, but if the plants are slightly older and tougher, they first enter the leaves and tunnel through the tissues to the leaf stalks, finally burrowing down these into the stems.

The caterpillars are either greyish-green or pink, and up to half an inch in length. One to three usually occur to the plant, although occasionally five or six are found. The caterpillars reach maturity in from three weeks in Summer to six weeks in Winter, and then pupate or pass into a resting stage inside the stems. The moths emerge from the pupae ten days to a fortnight later.

The moths, which are about half an inch in length, are greyish-brown, with dark brown markings in the centre of the forewings. Egg laying commences about a week after the moths emerge, and continues for a period of two to three weeks, a single female laying as many as 382 eggs.

The Stem Borer of Tomatoes has been recorded from many localities in the Central Coast from Sydney to Newcastle.

Light infestations occur in most late Autumn crops, whilst severe infestations are confined to a few early Spring crops in the Parramatta district. From 30 to 70 per cent. of plants are affected in these severe Spring infestations, which are restricted to comparatively elevated, warm situations where late Autumn, as well as early Spring crops, are grown. In these localities moths from the late Autumn crops emerge in July and early August and they infest the Spring crops during August and September. Towards the end of October the majority of the caterpillars are mature, and the extensive burrowing that has occurred in the stems causes the plants to wilt and die off. Another generation of moths commences to emerge from these plants about the beginning of November.

#### Control.

The remains of late Autumn crops should be destroyed as soon as picking ceases, or not later than the beginning of July. Such measure will prevent many moths from emerging and will therefore reduce Spring infestations.

In addition, the Spring crops should be sprayed every week for a period of one month with arsenate of lead at the rate of 1½ lb. of the powder, plus 3 pints of white oil emulsion, to 40 gallons of water. Treatment should commence not later than three weeks after transplanting.

## LATE BLIGHT OF CELERY.

**T**HE LATE BLIGHT disease of Celery is probably the most widespread and important of the diseases affecting this crop. There are actually two Late Blight diseases of Celery, caused by the two fungi, *Septoria apiigraveolentis* and *Septoria apii*. The leaf spots produced by the former fungus are smaller than those produced by the latter, but as the symptoms, life history, and control measures for the two diseases are very similar, both will be discussed here under the term, "Late Blight."

#### Symptoms of the Disease.

Late Blight is first evident as brown, dead spots on the leaves. These brown spots later turn darker, and numerous small black specks appear on the dead areas. These specks, which can be seen easily with the naked eye, are the pycnidia or fruiting bodies of the fungus, and contain the spores of the fungus. If the spots are sufficiently numerous, they may coalesce, resulting in withering and death of the whole leaf. Although leaf infection is most common, it is not unusual to find the stalks affected also.

The spores contained in the black specks or pycnidia are the means by which the fungus is disseminated from plant to plant. Spread of Late Blight is favored by wet weather.

#### Late Blight Carried by the Seed.

Although the disease may be carried over from season to season on affected Celery leaves and stalks left in the field, it commonly is introduced into seedbeds, field soil and new localities by means of infected seed. It is of interest to note that the spores of the Late Blight fungus carried with the seed lose their viability more quickly than does the seed, and that two-years-old Celery seed usually give disease-free plants if planted in clean soil.

#### Control Measures.

To prevent the development of Late Blight in Celery crops, and to minimise the losses resulting from an outbreak of this disease, the following control measures are recommended:

1. Practice field and seed bed sanitation, including the destruction of diseased Celery leaves and stalks by burning, the rotation of crops and the use of clean soil for the seed bed. If it is thought that the seed bed soil may be infested with the Late Blight fungus, it is advisable to treat it with a solution of formalin (1 in 50). This is applied at the rate of from  $\frac{1}{2}$  to  $1\frac{1}{2}$  gallons to the square foot, depending on the quantity necessary to saturate the soil. The soil is then covered for twelve hours with boards or bagging, after which the covers are removed and the soil is stirred several times within the next two weeks to allow the fumes to escape before planting.

2. If the seed is new, immerse it for 30 minutes in a 1 in 1,000 solution of corrosive sublimate (mercuric chloride), wash in water, and dry. If the seed is two or more years old, this treatment is not necessary. The 1 in 1,000 solution is prepared by adding  $\frac{1}{2}$  oz. of the chemical to 12½ pints of water. Precautions are necessary in using corrosive sublimate owing to its poisonous nature, and its corrosive action on metallic containers.

3. Spray the plants in the seed bed and after they have been set out in the field, with Bordeaux mixture at a strength of 1:1:10. The plants should be sprayed at intervals of one to two weeks, or sufficiently often to keep all new growth covered with the fungicide. The seed bed applications are most important, and on no account should these be neglected.—"N.S.W. Agricultural Gazette."

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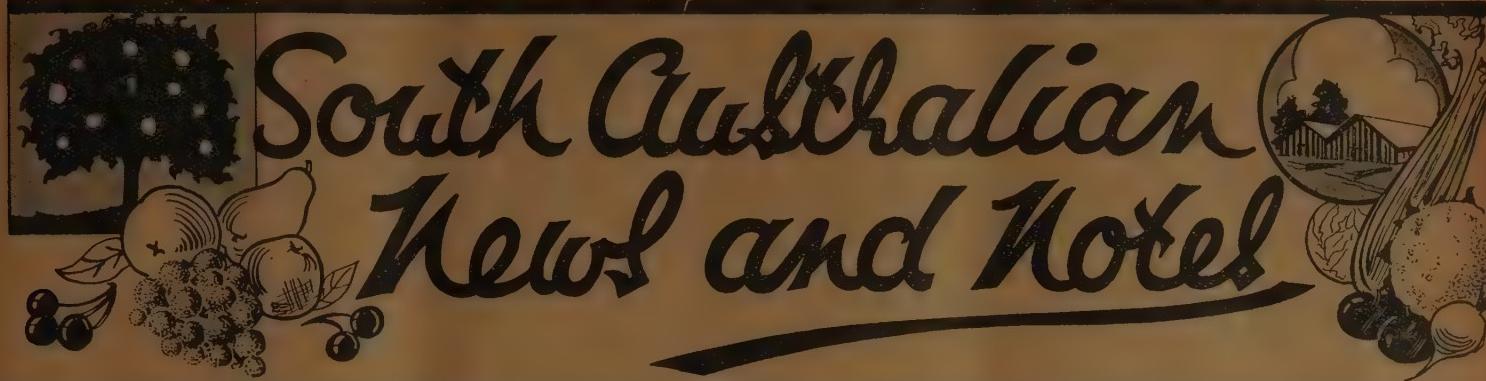
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# South Australian News and Notes

INCLUDING OFFICIAL NOTES AND REPORTS FROM THE SOUTH AUSTRALIAN FRUITGROWERS' & MARKET GARDENERS' ASSOCIATION.

## The South Australian Fruitgrowers' & Market Gardeners' Association Incorp.

### Meeting of Executive Committee

THE June meeting of the Executive Committee was held in the Board Room on Friday, June 24, 1938, at 10.30 a.m.

The President (Mr. W. J. Bishop) presided over the meeting attended by Messrs. H. H. Schultz, J. B. Randell, A. O. Petersen, H. N. Wicks, R. A. Cramond, G. Mackereth, G. H. Schultz, C. Ridley, A. Elliott, C. Stanford, J. C. Potts, F. Hughes, R. Hunter, W. H. Ind, J. Turner, I. R. Adams, L. J. Wicks and E. Giles.

Apologies for non-attendance were received from Messrs. C. Pitt, G. Jennings, N. T. Hobbs, G. Strange and C. W. Giles.

Minutes of the May meeting, a copy of which had been forwarded to all members, were taken as read and confirmed.

Correspondence—1. Dept. of Agriculture re Potato Grade Standards. 2. Dept. of Agriculture re Potato Grade Standards. 3. Dept. of Agriculture re by-products of waste and surplus Apples. 4. Dept. of Agriculture, Perth, re Apples. 5. Dept. of Commerce re Imperial Fruit Show. 6. "The Advertiser" re market reports. 7. E.S. and A. Bank, re Tomato and Celery export. 8. Paget Manufacturing Co. 9. Royal Commission on transport.

Mr. G. H. Schultz moved: "That the correspondence be received and dealt with." Seconded Mr. A. Petersen. Carried.

By-products: Mr. J. B. Randell moved: "That the matter be referred to the Apple Section." Seconded Mr. F. Hughes. Carried.

Potato Grade Standards: Resolved that letter be handed on to Potato Section.

Market Reports: Mr. F. Hughes moved: "That the 'News' be approached re the publishing of market reports." Seconded Mr. J. Turner. Carried.

Paget Manufacturing Co.: Mr. J. B. Randell moved: "That information be furnished." Seconded Mr. F. Hughes. Carried.

E.S. and A. Bank: Mr. J. G. Potts moved: "That further enquiries be made in this matter." Seconded Mr. C. Ridley. Carried.

Transport: Mr. H. N. Wicks moved: "That the action of the Association in this matter be endorsed and commended." Seconded Mr. J. Turner. Carried.

Apple Position: Mr. J. B. Randell moved: "That owing to the unavoidable absence of Mr. Strickland, the matter be further adjourned until next meeting." Seconded Mr. G. H. Schultz. Carried.

### Sectional Reports.

Tomato Section: A welcome was extended to the new chairman of the Tomato Section. Mr. Stanford re-

ported that the season had not yet commenced. A meeting of the committee was being called for early in July.

Celery: The Secretary reported that the season was progressing satisfactorily. Last week's loadings were the largest so far this season. Prices generally were satisfactory.

Soft Fruit: Mr. F. Hughes reported that a meeting of the committee to investigate cool storage was being called for July 15. He considered that this was an Association matter, and asked that delegates from the executive be appointed to the committee.

Mr. Cramond moved: "That the Association be represented on the committee." Seconded Mr. E. Giles. Carried.

Delegates: Resolved that the chairman, Messrs. J. Turner, H. N. Wicks, and one member from each Section interested be appointed to the committee.

Cherry Section: Mr. W. Bishop reported on the case position for the coming season.

Apple Section: Mr. J. B. Randell reported that he had just returned from Melbourne, where he had attended meeting of the Apple and Pear Council. A Bill was before the Federal House at the present which if passed would mean the appointment of Apple Export Board. Messrs. M. Vickers and F. F. Redden as growers' representatives were at present in Canberra interviewing the Minister on the Bill.

Secretary's Report: The Secretary gave a comprehensive report on his recent visit to Melbourne. Mr. J. B. Randell moved: "That the report be received and the Secretary be commended on same." Seconded G. H. Schultz. Carried.

Society Report: The Secretary submitted the Society report covering its activities over the past month. The financial year would close on June 30, and the staff were getting in readiness for the annual balance.

Potato Advisory Committee: Mr. L. J. Wicks moved: "That Mr. J. Randell be appointed as the official representative of the Association on the Potato Advisory Committee." Seconded Mr. N. Wicks. Carried.

Finance: The Secretary submitted the financial statement and reported on outstanding subscriptions.

Mr. W. Ind moved: "That accounts be rendered for subscriptions, pointing out that under the rules of the Association subscriptions are payable 12 months in advance." Seconded Mr. A. Elliott. Carried.

Duplicating Machine: Mr. L. J. Wicks moved: "That a new duplicating machine be purchased subject to arrangement with the Society." Seconded Mr. C. Stanford. Carried.

### NEW CHAIRMAN FOR THE TOMATO SECTION.

Mr. C. Stanford, of Seaton Park appointed.

WITH the close proximity of the 1938 Glasshouse Tomato Season, the Tomato Section has held its annual election for members of the Committee.

At a recent meeting of the new Committee, the important business of electing a chairman was transacted, and Mr. C. Stanford was unanimously elected to the position.

Mr. Stanford has been connected with Tomato growing for the past 14 years, and has been represented on the Tomato Committee for the past eight years.

The esteem by which he is held by the Section was evidenced in the elec-



Mr. C. Stanford.

tion when he topped the poll gaining a vote from every ballot paper cast.

Mr. Stanford's capabilities for the position of chairman is borne out by the fact that during his six years as a member of the West Torrens District Council, he was for his last two years in the Council elected chairman.

He has at different times acted as chairman for the Tomato Section, and his capable handling of duties the position entailed augers well for the future of the Section under his guidance. Mr. Standford will be supported by a capable committee consisting of: Messrs. A. F. Huelin, A. Elliott, W. Parsons, J. G. Potts, H. R. Waymouth, S. H. Davis, A. B. Fuss, K. Cooke, R. B. Stanford, W. A. Hersey, Jr., and M. Georgeff. In this team he has fine balance of experience and youth.

Congratulations Mr. Stanford — May your term of office be a happy one for you, and for the industry generally.

### MEMBERS!

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### THE EXECUTIVE COMMITTEE MEETING.

The next meeting of the Executive Committee will be held in the Board Room on Friday, July 29, 1938, at 10.30 a.m. sharp. All members are urged to attend, and any suggestions for the betterment of the industry will be gratefully received.

Mr. A. G. Strickland, Chief Horticulturist, will be present to answer any questions, and advise on any matter relative to fruitgrowing.

The Association is the machinery working on behalf of its members, and all members are urged to use that machinery as much as possible.

W. J. Bishop (President).  
A. Stuart (Secretary).

### HAVE YOU PAID YOUR SUBSCRIPTION?

The financial year of the Association is now nearing completion, and members will greatly facilitate the closing of the books by paying outstanding subscriptions as soon as possible.

Payments may be made through the post or at the Association offices, 288a Rundle-street.

Your co-operation will be appreciated.

### FRUIT TREES . . .

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## Oranges Make Luscious Dishes

**A**N Orange a day will keep the doctor away just as effectively as an Apple, if we can believe what dieticians tell us about this fruit. But in chilly weather Oranges in their natural state are rather too cold-looking to be very attractive. That is where a good recipe comes to the rescue. Try these:

### Nut Bread.

Sift together one cup flour, two teaspoons baking powder, one cup chopped walnuts, one dessertspoon grated Orange peel. Break in one egg, add the juice of one Orange and enough milk to make a stiff dough. Well grease a loaf tin and bake mixture one hour in a moderate oven.

### Beetroot and Orange Jam.

Boil till tender four medium-sized beet, then peel and grate. Slice two sweet Oranges finely, put in a saucepan with one and a half pints of water, boil till tender; then add  $\frac{1}{2}$  lb. of sugar. Add the grated beetroot, and boil till it jellies.

### Baked Marie.

Eight Oranges, eight Dates stoned and chopped, one tablespoon coconut, one tablespoon Raisins, one tablespoon chopped walnuts. Cut off tops of Oranges. With a sharp paring knife hollow out a small portion of each Orange near the top. Then work the knife round to lift out pieces of the remaining pulp, until Orange shell is clean. Mix Orange pulp with Dates, coconut, Raisins, and nuts. Return to Orange shells. Place Oranges in baking dish, with half cup of water in bottom of tin. Bake in a slow oven for 45 minutes. Take out of oven and put on each Orange a spoonful of meringue made from one egg stiffly beaten, one teaspoonful sugar. Sprinkle meringue with coconut and return to oven to brown. Serve hot or cold. A marshmallow may be used to top each Orange in place of meringue.

### Orange Float.

Slice two Oranges and lay in sugar for an hour or longer. Make a custard of one pint of water, one heaped tablespoonful of cornflour, one cup of sugar, and the juice of one Lemon. Cook until as thick as custard, and

when cold pour over the Oranges. If desired, place the beaten whites of two eggs on top, sweetened, and brown in oven.

### Rose Savory.

Take one large Seville Orange, small square cheese biscuits, cheese, frankfurts or cocktail sausages, beetroot, gherkins, small wooden skewers.

**M**ethod: Cut gherkins into slices, cut beetroot into slices, and with small plain cutter cut into rounds. Do the same with the cheese, using a cutter a size larger. Cut frankfurts into slices. Butter biscuits, take a skewer and put through centre of gherkin, then beetroot, cheese, frankfurt, then centre of biscuit. Stick firmly into Orange. Do this till fruit is covered. Serve on paper doyley with leaves round the base.

### Orange Bread.

Two Oranges, one cup sugar, two cups flour, two teaspoons baking powder, half teaspoon salt, one egg. Cut the rind of the Orange into very fine slices, cover with water, and add half cup sugar. Cook until tender, remove peel, and continue cooking liquid until its quantity is reduced to one-third of a cup. Mix rest of sugar with flour, baking powder, and salt, then add well-beaten egg and the Orange liquid with enough milk to make two-thirds of a cup. Stir in the rind, turn into loaf shaped tin, and cook in moderate oven for 45 minutes.

### Sweet Pickle.

Four Oranges, 2 cups sugar,  $\frac{1}{2}$  cups vinegar, 1 teaspoon cloves, 1 teaspoon cinnamon. Peel Oranges, removing the white part and cut into thick slices. Steam until transparent. Boil sugar, vinegar, and spices, tied in a bag for 20 minutes; add fruit. Simmer very slowly one hour; remove splices; place in jars and seal. Allow to stand for a week or two before using.

### HEARD IN THE MARKET.

First Gardener: "I'm writing a book on Cabbages, do you think I'm doing right?"

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## From Blossom to the Consumer— Production of Quality Fruits

By A. G. Strickland, M.Agr.Sc., Chief Horticulturist. Talk Broadcast through Station 5CK.

(Reprinted from S.A. "Journal of Agriculture.")

**M**OST of us are acquainted with that rather approximate classification of living things into those which are plants and those which are animals. Moreover, we know that, as a general rule, animals are equipped with organs — legs, wings, and so on—which enable them to move from one part of the earth's surface to another.

Plants, on the other hand, are usually fixtures. Although plants have not been endowed with locomotive powers, Nature has provided means whereby their seed may be spread from place to place. Some seeds are so formed that they may be carried long distances by wind; others are adapted to carriage by water. The seeds of most of the fruits which we commonly use as foodstuffs are designed, however, for dispersal by animals, and have been given special attributes to ensure that animals will co-operate in this design. The fruit which contains the seed is made attractive; it is given color, aroma, flavor, and food value in order that the animal may be tempted.

The fruitgrower is not directly concerned with these considerations, but in a sense there is a similarity between his problems and those of Dame Nature. He must produce fruit which will tempt the most discerning of animals—the human—and tempt sufficiently to make him buy.

So much fruit is now being grown throughout the world that production of fruit which is attractive in appearance and attractive to the palate is rapidly becoming a necessity. People are being told that fruit is good for them, but this is not enough to make them buy; the fruit offered must look tempting.

The term "quality" in its application to fruit may be conveniently considered under two headings—external quality, having relation to size, color, freedom from surface blemishes, and so on; and internal quality, having relation to flavor and texture.

External quality is largely, but not solely determined whilst the fruit is on the tree; flavor and texture of the flesh are governed not only by conditions during growth on the tree, but also by such factors as time and manner of harvesting and the treatment to which the fruit is subjected between the time of picking and its arrival in the hands of the consumer.

Let us first consider those factors which have bearing on the external quality of the fruit, and which operate mainly during its growing period on the tree.

The size of fruit is to some extent controllable, Winter pruning of various types of fruit trees being largely directed at reduction of fruit-bearing wood, so that the tree will not be required to mature more fruits than it can comfortably swell to optimum size. Estimation at pruning time of the tree's capacity in this respect can only be approximate, and it is often desirable to utilise the additional practice of fruit thinning to further reduce, after setting, the number of fruits on the tree.

Many varieties of Plums, Peaches, Apples, etc., cannot be adequately dealt with at Winter pruning, and routine removal of a number of fruits in order to enable the remainder to grow sufficiently large should be more generally practised.

It is, of course, possible to have fruit too large, and this contingency is not so capable of direct correction. Large fruit is unfortunately an unavoidable feature of the light crops experienced in the case of meteorological accidents, such as frosts, and more regularly in those fruits disposed to crop alternately.

Color of fruit is of marked importance in increasing its attractiveness, and, therefore, its value. Little, however, can be done in the way of orchard treatment to influence color. In the case of Apples, Peaches, and Nectarines, which for the development of high color require strong light, thinning of fruit, and pruning to open out the tree, will tend to improve color by virtue of increasing the amount of light reaching the fruit. Cultural and fertilizer practices seem to influence red color only in so far as they influence maturity and the amount of shade on fruit-bearing surfaces of the tree.

Brightness of color is perhaps more important than density, and under conditions of water shortage or excessively intense sunlight confusing color pigments may tend to mask the brightness of normal red color in such fruits as the Apple and Peach.

The orchardist is often at the mercy of the elements in regard to color development in certain fruits, and can take little direct action to improve color. Pruning and thinning do have an influence though, and experience has shown that certain districts are unsuitable for the growth of fruit varieties which require high color.

In passing, it is interesting to note that artificial aids to beauty have sometimes been employed for fruit. With Peaches, the amount of red colour may be increased by spraying the young fruit with lead arsenate, the effect apparently being produced as a result of injury to the skin. This method is, however, not recommended, as it is difficult to control the amount of injury occurring, and excessive injury may lead to pitting of the fruit and an unsightly purple color instead of red.

More direct methods than these were employed by the opportunist who, having a quantity of pale and wan-looking Peaches on hand, secured a paint spray outfit and some red lacquer. For obvious reasons, it would be unwise to follow this lead.

Blemishes of various kinds occurring on the skin of fruit have considerable effect in lowering quality. There are three main classes of superficial skin blemish, namely, those due to diseases or insect pests, those due to climatic agencies, and those due to spray injury.

The ravages of various insect pests and diseases are familiar to growers—trees may be killed or debilitated, fruit may be ruined. Most often, however, damage is only partial, and instead of ruining the fruit many pests merely blemish it to varying degrees.

When such blemishes occur the fruit either becomes unsaleable, or, where blemishes are comparatively minor, saleable only as low grade produce.

Present day market requirements are such that control measures for pests and diseases must be aimed not only at saving the tree or its fruit from destruction, but at reducing surface blemishes to an absolute

minimum. Only thus is it possible to obtain a line of fruit which can be culled to market standards with the minimum expenditure of time and labor.

Surface blemishes, due to climatic agencies, are not so readily controllable as those due to pests; in fact, some of the climatic agencies are entirely beyond human control. An untimely hail storm may seriously blemish a crop of fruit in a few minutes, and the grower is powerless to prevent or alleviate such damage.

On the other hand wind, although it cannot and does not effect in any particular instances such wholesale destruction as hail, probably leads to larger and more regular losses of fruit throughout the State as a whole. If it were possible to assess the direct financial losses of growers of Apples, Pears, citrus, and other fruits as a result of wind injury and total such losses I am sure the State total would be a staggering one.

Wind injury to fruit is in a large measure controllable; judicious pruning of deciduous fruits and removal of dead wood from citrus trees will assist indirectly. In many instances the direct agent—i.e., the wind itself—may be deflected by provision of shelter belts. The necessity for wind breaks is perhaps more evident in our citrus areas, but I am sure that many orchards in other parts of the State would also benefit if protected from prevailing winds.

Other climatic factors are probably of importance in connection with blemishing of the russet type. Here, however, we have an inter-relation with various types of spray injury, and often weather conditions may receive more blame than is due to them.

Experience has shown that certain types of spray are dangerous at certain stages of fruit development. Bordeaux mixture applied later than green tip to many varieties of Apple will almost certainly result in russetting. Certain spray materials cannot be mixed together with safety, and always it is necessary to take existing and probable weather conditions into account when applying many of our orchard sprays. Hot weather immediately following application of sulphur compounds will almost invariably lead to injury.

Whilst there is yet much to learn regarding spray injury, many commonly occurring types of spray blemish are entirely avoidable if due notice is taken of existing knowledge.

That which I have termed external quality of fruit is of great importance, and demands constant attention throughout the growing season.

During the period of protection of the fruit from external blemishes complex processes are taking place within each fruit, processes which, in the case of healthy trees, may be expected to reach a normal conclusion without occasion for the orchardist to interfere. As the fruit approaches maturity, however, it is time for the grower to consider the question of internal quality.

The stage at which the fruit is picked from the tree has very important bearing on internal quality, on the flavor, aroma and texture that such fruit will possess when it reaches the consumer.

There is little difficulty concerning fruit intended for immediate consumption; it may be permitted to attain full ripeness on the tree.

Fruit which is intended for cool storage or for a far distant market cannot, however, be allowed to ripen on the tree; it must be picked before attaining full maturity.

Everyone recognises the fact that a fruit tree is a living thing, and that each swelling fruit upon a tree is also living. Few people, however, stop to consider what happens to fruit when

it is picked from the tree. Does it die in an instant? No. The fact is that after harvesting fruits continue to live; they breathe in oxygen, exhale carbon dioxide, and gradually use up the food material which has been stored within them.

Each kind of fruit has its own normal expectation of life after picking—berry fruits a few weeks, Peaches and Apricots a little longer, and Apples still longer. Furthermore, within limits the lower the temperature at which they are stored the more slowly do fruits live; by cooling, we can prolong their life.

Certain of the shorter-lived fruits we do not attempt to transport over long distances or keep for long periods—at least, not in their fresh state. Others which have longer expectation of life must be handled with respect lest their life be brought to an untimely end before they reach the consumer.

Fruit intended for long keeping or for export must be harvested when sufficiently advanced to enable normal completion of ripening during or subsequent to storage, but also before it has reached full maturity.

Correct picking maturity is of utmost importance in determining the final internal quality of stored or exported fruit. For instance, Apples picked before they are sufficiently mature will shrivel, develop bitter pit in the case of susceptible varieties, and can never mellow to an attractive product.

On the other hand, if picked too mature, or mishandled after picking, they are quite likely to die before reaching the consumer; they will develop rots, internal browning, or breakdown, or at best will become mealy and unpalatable.

Determination of the correct stage at which to pick various fruits for various purposes is becoming simpler as the result of cool storage experiments accumulate, and within reason the grower can, by exercising his discretion, readily meet this contingency.

Having picked the fruit at the right time, however, it must be remembered that the fruit will live quickly, and die early, if exposed to high temperatures for any appreciable period.

Production of high quality fruit—fruit which is attractive, both internally and externally—is a constant task, commencing before the trees burst in Spring and extending right up to the delivery of the fruit into the consumers' hands.

It is, however, a task which is worth doing well, for although some markets may be over-supplied in a general sense, there is probably no market which is over-supplied with highest-quality fruit.

#### MARKET NOTES.

With a continued shortage of vegetables on the local markets, prices have been very firm during the past month. Cauliflowers principally being very short, and consequently cleared at very satisfactory prices. Apple quantities have shown a tendency to ease, and sales have been made at 3/- for Romes to 7/- per case for Delicious.

The citrus market continues very slow, but prices generally are satisfactory for this time of the season.

The Celery season is progressing very satisfactorily, and in comparison with last year, as regard to export, returns have shown an increase.

A few early glass-house Tomatoes have been seen on the local markets, which heralds the proximity of the 1938 glass-house Tomato season.

The Adelaide weather during June has been cold and showery, and has consequently played its part in local marketing conditions.

#### ARTIFICIAL MANURE SUBSIDY.

##### Arrangements Regarding Payments.

Under legislation passed by the Commonwealth Parliament during 1937, a subsidy at the rate of 10/- per ton, upon a maximum quantity of 20 tons used by each primary producer, is payable to primary producers who used fertiliser during the twelve months ending June 30, 1938, in the production of primary produce other than wheat. A subsidy at the same rate and subject to a similar limitation, is payable to approved organisations which supplied fertiliser without charge to primary producers, either for experimental purposes or as a measure of relief in cases of distress.

Applications for the subsidy must be lodged with the Secretary, Department of Commerce, in the various States, on or before January 31, 1939. Forms on which application should be made by primary producers are now available at post offices or may be obtained on application to the Department of Commerce.

#### ENGLAND'S AGRICULTURAL PRODUCTION.

According to figures released by the British Ministry of Agriculture, Agricultural production is increasing. Taking 1931 figures as a guide, 1937 increased 17 per cent. in production

## Troubles

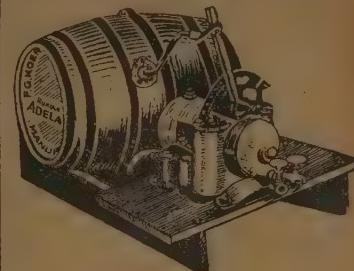
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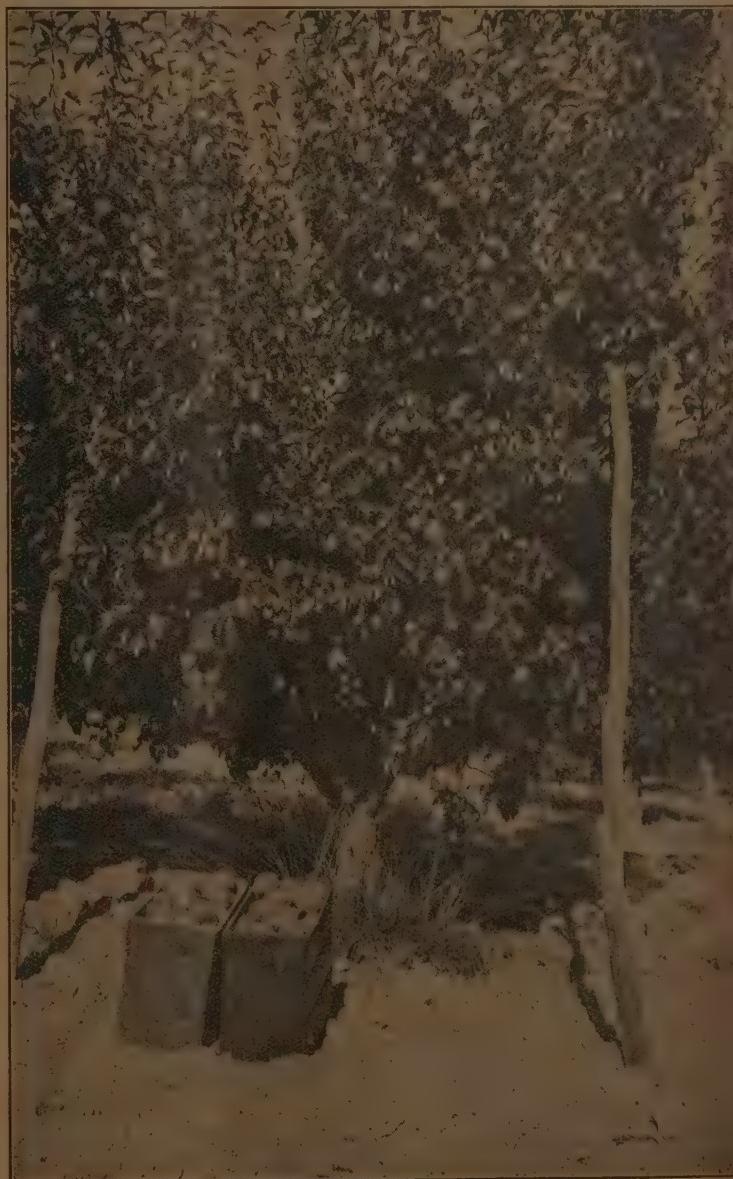


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as against increases of 12 per cent. in 1936 and 18 per cent. in 1935.

The total value of agricultural and horticultural production in 1937 is shown as £220,600,000, an increase of £14,700,000 over 1936. Livestock accounts for about 66 per cent. of the total and represents the largest increase in recent years.



A typical specimen of Williams Pear Tree carrying a good crop.

One of Australia's leading canning varieties.

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# Mid-Murray Notes

ANNUAL CONFERENCE AT BERRI — EROSION — TREE DESTRUCTION — IRRIGATION — ASPECTS OF VITICULTURE — APPLICATION OF SULPHUR — CITRUS MARKETING — NITROGEN AND MOULD — FERTILISATION OF CITRUS — VINE DISEASES.

(By Our Correspondent.)

RENMARK (S. Aust.), June 20.  
THE ANNUAL CONFERENCE of the various branches of the Mid-Murray Agricultural Bureau was held at Berri on Thursday, June 16, which was attended by a large number of growers. The papers read at this conference constituted a very comprehensive range of subjects and were freely commented on.

The General Secretary of the Central Agricultural Bureau, Mr. H. C. Pritchard, attended, and Mr. Ross Johnson acted as Conference Secretary. The chairman's welcome was given by Mr. P. Ingerson (President of the Berri branch).

The opening address was given by Mr. J. B. Murdoch (representative of the Advisory Board of Agriculture), who, in the course of his remarks, commented on the satisfactory attendance and the growing interest being shown by growers in these annual conferences. The standard set by Wai-

kerie last year was of a high order. Looking over the agenda he expected this conference to be equally successful. "Problems which arise from time to time," said Mr. Murdoch, "are discussed with intelligence and understanding by growers at these conferences, and we must turn to older countries for lessons which should not be repeated in this country. Yet we find our native matter cleared up to the roadside, stumps uprooted, and burned. This practice has been responsible for a vast amount of soil erosion, a problem which is becoming a national one. By the indiscriminate destruction of our native timbers we are imperilling the interest of future generations." With a further reference to the problems incidental to our irrigation practices and the production of dried fruits, Mr. Murdoch formally opened the conference.

The following Government officials attended the conference and freely entered into discussions and answered

questions. Mr. J. W. Spafford (Director of Agriculture), Mr. A. G. Strickland (Chief Horticulturalist), Mr. F. Arnot (Horticultural Adviser, Berri), Mr. Grosby (Horticultural Adviser, Waikerie), and Mr. M. W. Aird (Poultry Adviser).

Mr. L. W. Andrew (a grower of Waikerie) gave a most interesting paper on irrigation, and in dealing with the Waikerie type of soil akin to that known as Winkie sand the speaker said: "In many instances in the sandy soil it has proved that two hours is quite sufficient to saturate the soil, and in the majority of cases anything in excess of three hours soakage in one furrow meant that the grower is courting trouble for himself and his neighbors.... Much is being spent to-day on the drainage of surplus water from our irrigation areas, the greater portion of which should never have been put there. I believe that if the Department spent more in policing the application of water, and instructing the irrigationist in the art of applying a reasonable amount of water, they would have to spend less on the drainage of free water. What we need in the majority of cases is:

- (1) More frequent irrigations;
- (2) Shortening of the length of furrow;
- (3) More even distribution of water.
- (4) A material reduction in the amount of water applied."

The next paper to be delivered was read and prepared by Dr. E. Meier (Agricultural Master at the Renmark District High School), who dealt with "Some Aspects of Viticulture." Dealing with delving, a practice which has grown in popularity in recent years, Dr. Meier advocated the practice excepting on sandy soils which already absorb water too freely, although delving in sandy soils may be justified by the cutting of roots so as to create fresh ones. "The feeding roots of a vine," said Dr. Meier, "are produced afresh at the commencement of each growing season, but the actual feeding portion is immediately behind the growing tip.

"Each year, therefore, the mat of roots is increased. By delving, these roots are severed and the soil is loosened and exposed to the weather so that new rootlets formed can penetrate this area.

"The burying of vine cuttings, and the placing of any other organic matter in the delved furrow is also of particular value. Experiments have shown that the bulk of vine roots are developed in the humus containing layer, and therefore the deeper the humus layer, up to a limit, the deeper will the roots penetrate."

Dr. Meier strongly advocated the practice of green manuring, and did not think this could ever be overcome.

"Leguminous crops," he continued, "while they do give a certain amount of nitrogen to the soil during growth, absorb the greater portion into themselves, and a certain amount of nitrogen (one-third) is taken from the soil reserves, i.e., a legume does not obtain all its nitrogen from the air. This means that a legume as well as a non-legume, locks into itself the available soil nitrogen, and therefore, if the crop is allowed to stand until the roots of the vine commence to move, there will obviously be a nitrogen starvation. With all cover crops, therefore, that are turned under until bud burst, or even some weeks before, a little nitrogen should be supplied with non-leguminous crops, this shortage of nitrogen becomes even more marked." Dr. Meier also dealt at length with the application of artificial fertilisers, pruning, and the economics of the industry.

Mr. R. G. Lambert (Waikerie) gave a paper on "Current Comments." Mr. C. W. Till read a paper on "Sulphur," its application to the soil and the mechanical reaction which follows. Owing to the large amount of sulphur used in the industry for various purposes, Mr. Till gave a detailed account of the manufacture of sulphur and made his subject extremely interesting.

Mr. W. N. Ellis put a great deal of thought into the subject of his paper, "Citrus Marketing," in which he reviewed the marketing of this fruit, both in the local and export spheres. Harvesting, picking, packing, pre-cooling, were elaborated upon by this speaker.

Mr. S. E. Randell's paper on "Nitrogen and Mould," proved the speaker to be a keen observer. There is a belief among some growers that the loss through mould in recent years has been brought about by excess nitrogen in the soil. Mr. Randell is convinced that this is not the case, and set out to give his experience with Currants. Plot A and B received 2 cwt. sulphate of ammonia per acre and 2 cwt. superphosphate, plus a well grown cover crop. The two plots are on the same soil type, and irrigated at the same time, but because plot B enjoyed a position commanding a breeze from the prevailing wind the loss in 1937 (a disastrous year for Currant growers) was negligible, while plot A sustained a loss of 80 per cent. In every row on this plot the loss was greatest towards the centre, where no wind circulated. Mr. Randell concludes his remarks by the following words:

"The manorial tests at the Berri Experimental Orchard have proved beyond doubt that for the production of heavy crops of quality fruit, nitrogen is the dominant factor, and to omit or reduce this most valuable fertilising agent, or slacken upon cover crops in a vain endeavor to combat mould would be a retrograde step. Boiled down, my conviction is that freedom from mould is entirely a matter of weather, and the trellises being in such a direction as to permit a free passage of air when the wind arrives at an opportune time."

Mr. F. Arnott contributed a paper on "The Fertilisation of Citrus Trees," and as a Horticultural Adviser, speaks with authority on his subject, having made a special study of citrus growing. This valuable paper has been published in pamphlet form by the S.A. Dept. of Agriculture and will be a considerable asset to the literature on citrus production.

In tabulating the experiments on the manorial trials carried out at the Berri Experimental Orchard, the speaker gave the following results obtained in the sulphate of ammonia trials.

Average annual yield — Bushels per acre.  
48 lbs.=1 bushel.

Row No.	No. of trees in Test.	Quantities of Fertiliser per acre.	Years 1921-1929	Years 1921-1937
			Inclusive.	Inclusive.
3	16	1 cwt.	69	137
4	16	2	108	188
5	16	3	192	228
6	16	4½	218	264
7	17	5	212	248
8	17	2½	186	206
9	17	No fertiliser	60	39

From the above figures it will be seen that with the exception of the "no fertiliser" plot, which showed a decline, all of the other sections increased their average annual production over the whole 17-year period of the experiment compared to that of

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the first nine years, which was in a great measure probably due to the trees attaining greater age. In these experiments no cover crops were grown among the trees or any organic fertilisers, or other humus-forming material brought on to the land.

Little further comment is necessary upon this series of experiments, as the figures speak for themselves. The results obtained by the application of either sulphate of ammonia or stable manure are most striking, and show that yields per row were thereby increased from more than four to twelve times of those obtained when only superphosphate was used.

The results obtained in the citrus fertiliser trials of the Berri Experimental orchard clearly show that nitrogen is a limiting factor in citrus production, and that the application of potash and superphosphate by themselves is quite insufficient to provide the trees with the necessary requirements for their successful development.

Bulky organic fertilisers have only been used in connection with the four test rows in the superphosphate plot, where stable manure, in addition to superphosphate was applied, and for the eighth year period that these trials have now been going on the production of the trees under this test has been practically the same as those obtained from the adjacent test rows where sulphate of ammonia was used in conjunction with superphosphate.

There are indications, however, that on some of the fertiliser plots which have now been under clean cultivation for over 20 years, that the organic supply of humus in the soil has greatly diminished and that the trees would benefit by the addition of bulky organic fertilisers to the land.

In explanation of the trials with potash only and superphosphate only, which were carried on for a number of years, it will be noted that yields were uneconomic as was only to be expected, as a plant cannot be expected to thrive on a single plant food. The dominating factor of nitrogen, either alone, or in combination with superphosphate, or potash, is an outstanding feature in these trials.

Mr. P. N. Wilksch, of Berri, contributed a paper entitled "Problems of a Citrus Grower." The problems enumerated by this speaker gave rise to a resolution for the Government to have a research officer appointed to

investigate the many difficulties encountered by citrus growers. The resolution was sympathetically received by the Director of Agriculture, Mr. J. W. Spafford.

Mr. F. B. Harden, of Waikerie, read a paper on "The Stings of Finance." This speaker has evidently studied economics and soundly attacked the present financial system, under which the primary producer suffers many disabilities. The paper brought forth a good deal of comment, especially by Mr. McGillivray, who thought a whole evening could be devoted to the subject of economics as advanced by Mr. Harden.

The next item on the agenda comprised a talk by Mr. M. W. Aird (Government Poultry Adviser) on poultry. Although fruitgrowers only keep poultry as a side line, the speaker was subjected to many questions about the proper housing of the domestic hen. Mr. Aird strongly advised growers to stick to one breed of fowls and to feed them regularly and so house them that they are not allowed to roost in draughty places.

The evening session consisted of a talk by Mr. A. G. Strickland, Chief Horticulturist, on "Vine diseases prevalent along the River Murray districts and their treatment, with special reference to oidium." It was pointed out by the speaker that owing to the prevalence of oidium last year, it must be realised that the trouble would be cumulative, because of the fact that the vast number of overwintering spores would cause considerable damage in subsequent years if preventive measures were not adopted. It was much better to prevent an outbreak of any disease than attempt to cure it after it had arrived.

#### The application of sulphur

as a cure for oidium had been used as far back as 1846, and up to the present time no better cure or preventive had been found. Oidium does not require free moisture for the propagation of its Summer spores but can be incubated by sultry, muggy weather.

In some sub-tropical districts of Australia, particularly around Sydney, weather conditions are so favorable to the spread of oidium that it is almost impossible to grow vine fruits. Oidium develops at its maximum at a temperature of from 77 to 80 degrees Fahrenheit, and ceases when the thermometer reaches 100 degrees.

The fungus of the disease is entirely external, and does not penetrate the vine tissues as does black spot. This fact makes oidium more easily controlled than black spot, but oidium spreads with far more rapidity owing to the dense masses of spores developed, and which are carried away by the wind and may infect a vineyard situated at some considerable distance from the original place of development. The Winter spores can remain in the embryo form for a long time awaiting favorable weather conditions for their further life cycle. It is stated that the effect of sulphur on the spores of oidium is a gaseous one and that a certain gas is given off from sulphur at a given temperature which effectively kills them.

It is perhaps fortunate that the temperature which develops the spores of oidium almost coincides with the temperature which develops the gases from sulphur and in this way sulphur is the most valuable preventive.

It is hard to set down a hard and fast rule for the best time of applying dusting sulphur, but the first application should be given when the shoots are from 3 to 6 inches long, and the second some time before flowering.

In places where oidium has been severe in the past season a spraying of lime sulphur before bud burst should be effective.

Mr. Strickland also dealt with such other matters as black spot, eriosis, light brown Apple moth, and mealy bug. The orthodox treatment for black spot is a sulphuric acid swab or spray, using a 10 per cent. solution, but there is another method of Winter treatment which has distinct possibilities, and that is the spraying of a Bordeaux mixture with a double concentration. That is to say, instead of using a 6-4-40 mixture, a 12-8-40 mixture is applied before bud burst, spraying the vine butts as well as the rods. This should be followed up with Spring spray of ordinary strength. At the bunch protection spray, colloidal sulphur could be added to the Bordeaux and so the treatment of oidium and black spot can be combined. In the event of the light brown Apple moth being troublesome, lead arsenate could also be included in this mixture.

Regarding the relative qualities of Bordeaux and Burgundy mixture, Mr. Strickland said that the lime mixed with bluestone gave it a better adhesive characteristic than the soda-bluestone mixture.

The home-mixed Bordeaux is superior to the proprietary mixture. Bluestone can now be obtained in a snow crystal form which dissolves immediately and is a great convenience as compared with the laborious dissolving of the old crystal form. In answer to a question whether the burying of vine cuttings is likely to spread black spot or oidium, Mr. Strickland said that there were already sufficient Winter spores left over from last year's outbreak to start a first-class epidemic, should weather conditions be favorable, so that the few spores of black spot which might be on the canes would not lessen the infection if they were buried. Besides that the canes are buried in the centre of the row and at some distance from the vine, and there does not seem to be much danger of these canes infecting the vine.

At the conclusion of the conference, Mr. Liddicoat, of Moorook, moved a vote of thanks to all those who contributed papers to the conference and for the Government officials who had been of so much assistance in answering questions. Mr. Fricker, of Pyap, seconded the motion and spoke of the great benefit which we had all received from this gathering.—"Nemo."

#### COLD STORAGE OF FRUIT

(Continued from page 16.)

cold districts, such as Batlow, Orange, etc., may be held for four weeks. The fruit should then be wrapped in oiled papers and placed in cold storage chambers. This variety should never be stored for long periods except in oiled papers, otherwise scald is likely to develop.

Although prompt storage of Apples and Pears, with the exception of the Granny Smith variety, is essential in order to obtain the maximum storage life of each variety, it does not always follow that if a given variety of Apple or Pear is held out of store for some time it will not have any storage life left; much depends on the variety. Williams Pears, for instance, if held under ordinary storage conditions for seven to ten days would ripen and be unfit for storage, whereas Pears of the type of Winter Nelis, Beurre Bosc, etc., if held in common storage for a week or ten days, would still have a considerable cold storage life. The same applies to different varieties of Apples.

#### Tests with 36 per cent. Superphosphate, Sulphate of Ammonia and Stable Manure.

No. of Trees Row No. in Test.	Quantities of Fertiliser applied per acre.	Average Annual yield per acre in bushel cases, 48 lbs. = 1 bushel.	
		Mixed Super- Fertilisers phos- phate 1930-37. only, 1921-28.	
Part 2 . . . 3	3 cwt. superphosphate, 15 tons stable manure . . . . .	99	16
Part 2a . . . 4	3 cwt. superphosphate . . . . . 5 cwt. sulphate of ammonia . . . . .	175	16
Part 4 . . . 4	6 cwt. superphosphate . . . . . 15 tons stable manure . . . . .	328	28
Part 4a . . . 4	6 cwt. superphosphate . . . . . 5 cwt. sulphate of ammonia . . . . .	176	28
Part 6 . . . 3	10 cwt. superphosphate . . . . . 15 tons stable manure . . . . .	216	23
Part 6a . . . 4	10 superphosphate . . . . . 5 cwt. sulphate of ammonia . . . . .	283	23
Part 10 . . . 4	12 cwt. superphosphate . . . . . 15 tons stable manure . . . . .	390	93
Part 10a . . . 4	12 cwt. superphosphate . . . . . 5 cwt. sulphate of ammonia . . . . .	410	93

#### Tests with Sulphate of Potash and Nitrogenous Fertilisers.

No. of Trees Row No. in Test.	Quantities of Fertiliser applied per acre.	Average Annual yield per acre in bushel cases, 48 lbs. = 1 bushel.	
		Mixed Potash Fertilisers only, years 1930-37. 1921-29.	
Part 10 . . . 5	1 cwt. sulphate of potash . . . . . 7½ cwt. blood and bone manure . . . . .	77	46
Part 10 . . . 6	1 cwt. sulphate of potash . . . . . 5 cwt. sulphate of ammonia . . . . .	177	46
Part 11 . . . 5	2 cwt. sulphate of potash . . . . . 7½ blood and bone manure . . . . .	241	101
Part 11 . . . 6	2 cwt. sulphate of potash . . . . . 5 cwt. sulphate of ammonia . . . . .	402	101
Part 12 . . . 5	3½ cwt. sulphate of potash . . . . . 7½ cwt. blood and bone manure . . . . .	284	52
Part 12 . . . 6	3½ cwt. sulphate of potash . . . . . 5 cwt. sulphate of ammonia . . . . .	238	52
Part 13 . . . 5	5 cwt. sulphate of potash . . . . . 7½ blood and bone . . . . .	236	64
Part 13 . . . 6	5 cwt. sulphate of potash . . . . . 5 cwt. sulphate ammonia . . . . .	269	64
Part 14 . . . 5	2½ sulphate of potash . . . . . 7½ blood and bone . . . . .	222	32
Part 14 . . . 6	2½ sulphate of potash . . . . . 5 cwt. sulphate of ammonia . . . . .	168	32

# Motor Cars, Trucks, Tractors

## Tractor Versus Horses

### Which Is More Important?

**A**N INTERESTING DISCUSSION took place recently, at a meeting of farmers at Morchard, South Australia, upon the question of whether tractors or horses were the most profitable to use for farming.

One speaker, Mr. C. Irvine, stated that tractors would, over a period, prove more profitable than horses, the purchase of the tractor being the more expensive. With a tractor a larger area could be worked and worked more quickly, particularly during seeding time when it was necessary to get the seed in at the most suitable time. With a tractor more sheep could be kept, as the feed would not

be required for horses and, again, the sheep did good work in keeping the weeds down, particularly on fallow. When not in use the tractor cost nothing. When the day's work was over with a tractor it was over, but with horses it took some time to unharness and feed and water them, thus using a tractor was more pleasurable. Little hay was needed on a farm where a tractor was used and, therefore, with little hay to cut more crop could be reaped.

Mr. R. McCallum favored horses. He said that a good team of horses was more economical to buy, and with several brood mares good stock could

be produced, thus keeping up a young team of horses; also horse breeding was a profitable sideline. A tractor depreciated rapidly in value, while repairs were expensive, particularly when replacing with new parts. Tractors and fuel for tractors were purchased outside our country, thus the money was going out.

With buying and selling of horses the money circulated within the country. In the advent of war fuel may become scarce, and prices would no doubt soar. In most instances fodder for horses could be produced on the farms. Horses could always be relied upon, but with a breakdown of the tractor it may be several days before it could be repaired, particularly if the mechanic was some distance away.

to drain the vehicle and fill up with new oil about every 1,000 miles in order to get the best service out of the motor. Spark plugs should therefore be looked at regularly and every assistance given to the engine during the heavy Winter driving.

Tyres, too, should be watched and a good grip on wet roads ensured. Worn tyres are a bigger danger in wet weather than at other times, and it is unsafe to drive on smooth treads; often it pays to fit new tyres and feel safe in driving under Winter conditions. Lights, too, should be checked up and the wiring gone over to prevent shorts and danger to the ignition system from wet conditions.

## Quick Facts about— 1938 CHEV. UTILITIES

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12 cwt. and 15 cwt. capacities. 112" wheelbase. 85 h.p. high compression, Valve-in-head, 6-cylinder Engine. New Diaphragm Plate Spring Clutch for smoother, quicker response, more positive in action, and easier in operation. Redesigned Valves and Guides with greatly increased cooling area for faster dissipation of heat away from combustion chambers. Electroplated Cast Iron Pistons, Four-bearing Crankshaft, Full length Water Jackets, Ventilated Generator, perfect Lubrication. Improved Electrical System, including new starting mechanism with overrunning Clutch and Automatic Throttle Advance for sure, quick-fire starts. Improved automatic Down-Draught Carburetion. Perfected Hydraulic extra-powerful Brakes. New Rear Spring Attachment to the rear axle housing for smoothness and stability. Easy-riding Springs maximum length. Chassis Frame of Box Girder Construction on the 12 cwt. capacity. Channel Steel Frame on the 15 cwt. capacity. Synchro-mesh Gears. Full Tool Kit. Holden all-steel Coupe front Utility Bodies, with Panel Vans. Every type of Body required available for individual service. All Bodies designed to give maximum loading space.

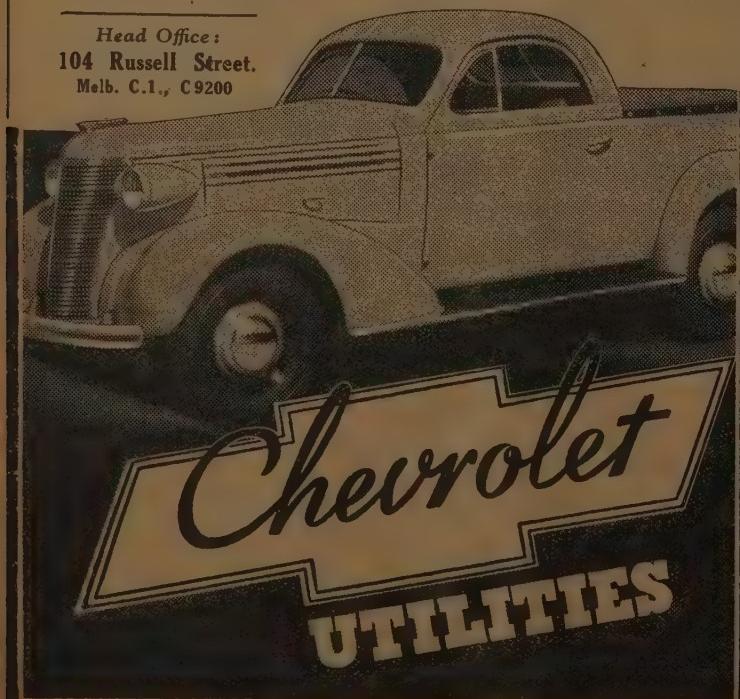
1938 "CHEVROLET" Utilities are now on display—inspect them to-day. Demonstration gladly arranged.

Prices from £249. (Plus Tax).

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### DRIVING HINTS.

#### Do's and Don'ts.

Motorists who wish to protect their own safety and that of others on the road these days will appreciate the following hints:

Don't take your car on the road unless it is in sound mechanical condition. Don't attempt to drive with smooth tyres or inefficient brakes. Don't try to make up time on busy thoroughfares, overtake at bends or the crown of a hill, and, above all, Don't cut in.

Do obey the traffic regulations, practice road courtesy, treat every cross road as a danger spot, resist the temptation to overload the car with passengers and luggage, refrain from "hogging" the road, and Do drive safely.

### SIGNIFICANT ROAD WARNING.

The latest method of warning motorists in U.S.A. that they are approaching a dangerous road section is by painting a wavy white line down the centre of the road. Such a method has the great advantage that once motorists are aware of the significance of the wavy white line they can hardly fail to note their approach to a danger zone.

### LOOK TO YOUR SPARK PLUGS.

#### Waste After 10,000 Miles.

That spark plugs cause waste of petrol after about 10,000 miles' use is the claim of a director of engineering research at the University of Michigan.

There are two main reasons, he said, why improvement in fuel consumption and engine efficiency follows the fitting of new plugs. One of these is the fact that the surface of the porcelain becomes impregnated with a material which decreases its resistance to the flow of electrical current. The other is that the constant passage of the spark between the points causes ionisation of the surface materials, gradually resulting in the evaporation of certain materials from the wire, with the result that the longer they are used the higher the voltage required to make the spark jump the given sized gap.

### HEAVIER OIL NOW.

Drivers of cars and trucks should now have changed their oil to a heavier grade for the Winter months. It is a good plan, not always followed,

### TO AVOID TAR SPLASHES.

Many new cars have been disfigured with splashes of tar, and motorists should keep a lookout for newly-tarred surfaces. It is not only necessary to drive slowly over these freshly tarred surfaces, but to steer a wide course from other cars so as to avoid their splashes.

An effective substance for removing any spots of tar from the car is butter. Apply it while the tar is still fresh and allow it to dissolve, then wipe off with a soft cloth. Do not use petrol as it is liable to leave a stain.

### DIESEL POWER.

#### Growing Rise Recorded.

To meet modern conditions, the New York Automobile Show will this year provide increased space for Diesel exhibits which will include Diesel-powered cars and tractors as well as trucks. The experimentation stage has already been passed, and motor engineers have overcome the earlier trouble of applying Diesel power to cars, and in the near future it is possible that this form of power will become much more general.

### MOTOR SPEED LIMIT.

#### 30 M.P.H. Too Slow.

At a meeting of motor carriers held in Sydney on June 10, exception was taken to the 30-mile per hour speed limit being enforced. Market gardeners and orchardists from distant areas stated that although they entered the limit area as early as 4 a.m., the roads were very congested, caused by the slowing down of road vehicles on their to market. This resulted in the journey to the market being lengthened by an average of one hour for distant growers.

It was decided to co-operate with all bodies for the abolition of the speed limit.

### CLEANING THE RADIATOR.

The interior water passages of the radiator and engine should be cleaned twice a year to maintain an efficient cooling system. There are two methods. One is to add about ½ lb. of washing soda to the water in the radiator before starting on a run, and draining the water when the engine is still hot. This will remove the soft sediments which cover the internal surfaces. The other method is to flush the radiator with a hose.

# THE CITRUS INDUSTRY

## Mealy Bug Control

Notes From South Africa.

### Banding and Baiting.

**I**N South Africa, says Messrs. G. C. Haines and H. J. Bishop, in "The Citrus Grower," mealy bag infestations were more severe last year than usual and severe outbreaks occurred after the mid-season. The practice of banding and baiting was not followed as generally as it should have been. They report as follows upon results obtained from the different methods of control.

### Banding.

The Tanglefoots still show about the same results as previously reported, the order as to duration of stickiness being (1) "cold mix," (2) made over boiling water, and (3) made direct over a fire.

A new method of "cold mix" preparation, by which the resin, which has been crushed and sifted through a very fine-meshed wire gauze, is first dissolved in petrol and then the castor oil added, is being tested. This mixture remains fluid, even after the petrol has evaporated off, and even when a quarter more than the usual quantity of resin is used.

### Baiting.

The Barber bait appears to have given fairly good results, especially against the Argentine ant, *Iridomyrmex humilis*. The Bishop bait has showed up favorably against both species of ants, in some instances being more attractive than the Barber bait. A new type of bait container is being tested. It is the ordinary waxed-paper carton, such as is used for cream.

### Direct Biological Control.

By this, is meant direct liberations of mealy bug parasites or predators into an orchard. For direct and quick biological control it is a common practice to liberate *Cryptolaemus*, ladybird beetles into an orchard. This is a quick and effective way to check a severe mealy bug infestation; but, unfortunately, it is not always possible to get these useful predators when they are urgently needed. This method of direct biological control was practised with success by several growers this season.

### Conclusions.

Observations on this season's outbreak of citrus mealy bug indicate that ant control should be started early, so that the ant population may be reduced below the danger limit before mid-season, before the trees, although skirted, have their branches drooping on the ground. It is very difficult to obtain effective ant control unless the trees are skirted. It also helps if the Summer fumigation for scale insects can be completed as early as possible, otherwise the parasites and predators of the mealy bug, many of which have been killed, will not have time to increase sufficiently to be effective late in the season, when they are most needed. If a severe, late mealy bug outbreak should, unfortunately, occur, the only practical way, so far known, to check it is to liberate *Cryptolaemus*, ladybird beetles or to spray the trees with water by means of a high-pressure spray pump.

## HARVESTING THE CITRUS CROP IN N.S.W.

With a good crop of the principal commercial varieties showing in all districts, the harvesting of Navel Oranges will now be in full swing. In frosty locations, and particularly if the soil be dry, the trees should be relieved of their crop. This also applies to Lemons and Mandarins. Subsequently, trees more favorably situated should be picked over.

As prices for Lemons during the ensuing few months will probably be weak, harvesting should be performed with the greatest of care with a view to storage of such fruit for marketing as cured fruit a few months hence. Only fruit from trees in a thrifty condition and grown in a well-drained soil can be held satisfactorily in storage.

Oranges and Mandarins must be carefully sized to facilitate attractive packing. In cases where fruit is infested with red scale, such fruit shall be picked early in the season, as the rind is less susceptible to injury when approaching the stage of maturity than later.

## HUMUS FOR CITRUS.

### N.Z. Results Satisfactory.

**I**NFLUENCED by reports received, the N.Z. Journal of Agriculture states that no amount of fertilizers applied to citrus trees will compensate for lack of humus in the soil.

Where it is possible to grow green crops, this method of supplying humus is usually the cheapest.

Leguminous crops are recommended for this purpose on account of the nitrogen which is gathered from the air by such plants and stored in nodules on the roots. In most districts blue lupin, sown at the rate of two bushels per acre, will make an excellent cover-crop, although in certain soils white lupin appears to be more suitable. Other legumes suitable are vetch, tares, and peas.

Recent trials in the Gisborne district with purple vetch as a cover-crop gave promising results. To obtain the best possible growth the seed should be sown in February after the soil has been brought to a fine tilth. The crop should then be ready for ploughing-in during June or early July. The ploughing-in of green crops

late in the Spring is detrimental to the health of the trees, and should be avoided by early sowing.

Where there is a risk of the green crop seriously interfering with picking operations it is a good practice to sow every alternate land only—the following season the other lands should be sown. The practice also avoids considerable damage to the green crop while the fruit is being harvested.

In older groves it is sometimes difficult to grow a satisfactory crop of green material between the rows owing to the spread of the trees.

In such cases it is necessary to consider the advisability of growing a green crop such as lucerne or clover on adjoining land, which can be cut several times during the season and used to form a mulch around the trees.

The inducement to use the space between young trees for revenue-producing crops, to the detriment of the supplying of humus, should be avoided. Farmyard manure of any kind is of immense value to citrus trees, and where available should be applied in large quantities.

## ERADICATE ORCHARD PESTS WITH THIS ECONOMICAL SPRAY PLANT

The leadership of Ronaldson-Tippett Spraying Plants has been recognised by orchardists all over Australia and rewarded with the largest sales in the Commonwealth. This, because of their outstanding design and quality and unfailing ability to stay on the job year after year, ensuring life-long satisfaction. We will finance you to purchase a Ronaldson-Tippett Spraying Plant that will pay for itself in one or two years...you can't afford to carry on your fight against orchard disease and low profits without the backing of such a plant. Write now, for full particulars of this unique offer.

Any of these plants can be fitted with steel wheels or pneumatic tyres as required



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Superior quality Chain Drive between Engine and Pump, strong and efficient. Can be relied upon for years of noiseless and reliable service without fault.



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Totally enclosed, roller-bearing, Vertical Petrol Engine with Automatic lubrication. Built for reliable working at low cost, ensuring life-long satisfaction.



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Propeller type Rotary Agitator ensures a consistent spray mixture at all times — a factor of vital importance.



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**RONALDSON TIPPETT**

"Was my father very violent when you asked if you could marry me?"  
"Was he! He nearly wrung my hand off!"

## CITRUS PRODUCTION GROWS.

## Palestine and U.S.A. Reports.

From the United States of America, Florida reports expectation of the biggest citrus crop in history. Shipment generally starts in late August and early September. As showing the growth of production, in September, 1938, Florida shipped 300,240 boxes of new crop Oranges. In the same month in 1934, she dropped to 289,200 boxes. In 1935, 146,847 boxes, but increased in 1936 to

618,856 boxes. Up to April of 1938, Florida had shipped 28,045,000 boxes of all citrus fruits made up of 15,200,000 Oranges, 5,650,000 Grapefruit and 2,040,000 Tangerines, which was identical with all varieties shipped in the same period in 1937. Canners used 4,981,858 cases of Florida citrus fruits to April 1, 1938.

California prospects are reported to be better than in 1937, and an estimate of 42,158,000 boxes of Oranges is forecast as against 30,063,000 produced in 1937. Lemons are predicted at 8,550,000 boxes,

somewhat more than in 1937, while 1,917,000 boxes of Grapefruit is the estimate for 1938, being 350,000 more than in 1937.

Palestine last year created a record in exports of citrus fruits, reaching 11,000,000 cases, nearly double that of 1937 season. This represented 9,400,000 cases of Oranges, 1,500,000 cases of Grapefruit and 60,000 cases of Lemons.

It is anticipated that less wastage will occur this year and that the total production will be higher than last year.

Phone: Epping 96. After hours: Epping 58.

ESTABLISHED 1901.

# FRUIT TREES

Large quantities in all leading varieties. Our trees this season are exceptionally sturdy and well shaped, without any blemish or marking. Early booking is advisable for later delivery.  
Large quantities of Peach stocks and Lemon stocks.

KUNDE SECATEURS, BUDDING AND GRAFTING KNIVES AVAILABLE.

**L. P. ROSEN & SON**

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CATALOGUE  
FREE  
on  
Application.

An actual photograph of a shipment of fruit being loaded at the Patrick Wharves, Darling Harbour, Sydney.

## FRUIT travels Quicker, Safer and Cheaper by the Patrick Line

TO the Fruitgrower, nothing is more important than getting his produce to market while it is in tip-top condition. Patrick steamers are not only equipped for the safe carriage of perishable cargoes, but their regular weekly sailings make prompt deliveries a certainty! Patrick employees are trained to offer consignees prompt and courteous attention. Patrick rates, too, have been standardised at levels which mean a considerable saving in freight costs. And, another thing! There is no need to book space ahead. Simply send your fruit to the nearest Patrick port of call — Sydney, Melbourne, Brisbane or Newcastle — and leave the rest to us.

**JAMES PATRICK & CO. PTY. LTD.**  
Scottish House, Bridge Street — Sydney  
Telephone: BW 4181 (6 lines).  
Also at MELBOURNE, BRISBANE, NEWCASTLE.

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GRUBBING?

Previous experience had convinced me that to be really efficient a grubbing machine should have ample power and ropes that will meet the heavy demands required of them. I found that shovel and axe work is very costly either by itself or in conjunction with a machine. The machine that offered these features with a host of others, was THE "MONKEY" GRUBBER.

It gave me the power of 260 pairs of hands in a simple and compact form; the lever is short, so that I am able to stand firm-footed and get the full stroke. There are two speeds in the machine, as well as an automatic release that allows me to let off a strain, or as the machine will work in any position, it comes in for all jobs that would require a chain block. It is taken to the job on a pair of wheels like a barn truck, and is rigged for work in a few minutes. The ropes are in lengths that I find easy to handle, and each one is fitted with hook and loop couplings, so simple and absolutely IT for effectiveness. The makers have included a sturdy snatch block with a novel method of securing to the ropes, and also a fine type of firm gripping rope shortener. The latter makes it very easy to accommodate the lengths of rope to the tree or stump being pulled, and is quickly released from the rope. The combination of so many time and labor saving features makes the "Monkey" Grubber a superior grubbing outfit.

REMEMBER FOR YOUR GRUBBING THERE'S ONLY



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## CITRUS FRUIT FOR NEW ZEALAND.

## Picking, Handling and Packing.

THE CITRUS ADVISORY COUNCIL has outlined the manner of submitting citrus fruit for export to New Zealand, and asks that the following information be widely presented.

## 1. Picking of Fruit.

The fruit must be clipped from the trees, preferably by means of a blunt nosed clipper. No protruding stems should be left on the fruit, and where necessary a second cutting in order to remove superfluous wood should be made. The fruit should be placed gently, not dropped, in the picking box.

## 2. Handling of Fruit.

Throughout the whole of the operations from the picking of the fruit to the wrapping and packing, gloves should be worn. Misshapen or excessively corrugated fruit shall not be shipped.

## 3. Pre-Cooling.

Wherever possible all fruit shipped should not exceed a temperature of 53 degrees at the time of loading, and every effort should be made to comply with this requirement.

## 4. Grading.

Oranges shall comply with the following provisions:

(a) The outer layers or shown surfaces of the Oranges shall be a true indication of the contents of each box.

(b) Each box shall contain one variety of Orange only.

(c) No Orange intended for shipment to New Zealand shall measure less than 2 inches in diameter.

(d) The Oranges shall not be dry. They shall be mature, of normal shape and appearance common to the variety, sound and of reasonably even color, and shall have been clipped from the tree.

(e) Oranges shall be packed in either of three grades, namely "Special," "Standard" or "Good."

(f) Oranges described as "Special" shall in addition be substantially free from disfigurements such as are caused by scars, scratches of the skin, excessive navel segments, cavities, punctures and blemishes caused by any insect or fungus pest. Such disfigurements shall not exceed 2½ per centum of the total surface area of any individual Orange.

(g) In Oranges described as "Standard" disfigurements such as caused by scars, scratches of the skin, excessive navel segments, cavities, punctures and blemishes due to any fungus or insect pest may be allowed to the extent of 10 per centum of the total surface area of any individual Orange.

(h) In Oranges exported to New Zealand and described as "Good," disfigurements such as are caused by scars, scratches of the skin, excessive navel segments, cavities, punctures and blemishes due to any fungus or insect pest may be allowed to the extent of twenty-five per centum of the total surface area of any individual Orange.

(i) Oranges shall not be exported unless they have been sweated prior to packing for a period of at least seven days.

## PATENTS GEORGE A. U'REN

PATENT ATTORNEY  
HENRY HOUSE, 499 LITTLE COLVAN ST., MELBOURNE.

# NEW SOUTH WALES

## Murrumbidgee Irrigation Areas

**CONTRACTS FOR NAVELS — PRUNING IN FULL SWING  
— MR. LACKIE TRANSFERRED — CLAIM FOR AWARD  
RATES — NEW AERODROME — WATER RATES REDUCED  
— LEETON ANNUAL MEETING — LEETON TO CAN SOFT  
FRUITS — RED SCALE CONTROL.**

(By Our Special Correspondent.)

**T**HE WEATHER during the month has continued very dry, with cold nights, and the citrus crops have been somewhat delayed in ripening, but the sheds now are a very hive of industry, as the export quotas for the New Zealand market are being packed.

The Griffith Producers and other packing companies have secured Government contracts for the supply of Navel oranges, and fresh tenders are called for each month, it is understood, probably so that the N.Z. Government, who are the purchaser of all consignments of Oranges, can ascertain the requirements of their retailing agents, and thus fix or arrange for what consignment can be absorbed by the general public.

The supply of Oranges from Cook Islands which has been one of the principal sources of supply, are mostly of the seedling varieties, and the shipments greatly depend on the condition of the weather and the shipment which it is understood if taken off by tenders to the larger ships has often to be shifted from one place to another for shipment owing to rough seas prevailing.

This may perhaps account for a paragraph which recently appeared in the Sydney papers stating that a consignment of Oranges from Cook Island had been dumped in the sea owing to having gone bad in transit.

Provided that the packing and handling of the Oranges from the M.I.A. is continued under the same strict supervision as at present, the New Zealand market should prove a profitable source of outlet for the Navel crop, which is somewhat larger than was at first anticipated.

Very strict supervision and inspection at the ships' side is carried out by Departmental officers, and every precaution taken to insure that the pack forwarded shall maintain the high standard which is laid down in the regulations.

Pruning on the areas has now commenced, although in some places the trees and vines are still holding their leaves, some growers prefer leaving this operation until a little later, especially as there have been several severe frosts of late, and these would probably have a detrimental effect on the fruit shoots if the wood is not fully matured.

Mr. N. Lackie, who for nearly fourteen years has been in charge of the Viticultural Nursery at Griffith, has been promoted to the charge of the Narara Nursery on the retirement of Mr. White.

At a recent meeting of the Griffith Branch of the R.S.I.L.A. a motion was carried that a letter of appreciation of the valuable services rendered

to soldier settlers by Mr. Lackie be placed on record and forwarded to Mr. Lackie, congratulating him on his promotion.

Mr. Lackie's long experience at both Howlong and Griffith Nurseries should be of great value to the Department in his new sphere of action.

During the month, orchardists throughout the M.I. Areas have been served with notices per registered post, citing them to appear before the Commonwealth Court of Conciliation and Arbitration to show cause why they should not pay award rates and comply with certain conditions of employment.

Action has been taken by fruit-growers' organisations at both Leeton and Griffith, to be represented by the Fruitgrowers' Association.

At the last meeting of the Willimbong Shire the matter of the making of an entirely new aerodrome was considered.

The great importance of this was stressed, as the present site was considered dangerous to any pilot who was not fully conversant with certain aspects of this site, and a new one consisting of an area of 400 acres in the Mountain Dam Paddock is under consideration by the Council.

Mr. J. O'Neill, Inspector of Aerodromes of the Civil Aviation Board, visited Leeton on the 7th and 8th insts., and in company with the Shire Engineer and Shire Clerk, inspected the existing Leeton Aerodrome and afterwards consulted at the Council Chambers.

The importance of Leeton as an aviation centre is becoming more realised every day, and the way the aeroplane is now used for business by so many prominent men calls for the strictest attention to the site of an aerodrome, and before long it is anticipated that one of the most up-to-date dromes in the State will be laid out.

After a strenuous fight by the Progress Association of Corbie Hill Soldier Settlement, the water rates have been reduced to 17/6 per acre foot in place of the original rate of 27/6. The result has been that more green manure crops have been put in, and the effect of this should be a great improvement in the soil condition on some of the farms.

The growing of crops of Tick Beans or other nitrogenous crops is now a recognised practice throughout the whole area, but this season, owing to the exceptional dryness, some settlers fearing a frosty Winter have abstained from putting them in, as it was feared that the high growth might have a tendency to hold the frost around the trees.



Thirteen-year-old tree of Wilson's Wonder Walnut, 26 feet in diameter, at the nursery of Mr. L. J. Wicks, Highbury East, South Australia.

At the annual meeting of the Leeton Agricultural Society, held on the 14th inst., the President (Mr. F. R. King) had the pleasing duty of presenting a most satisfactory report before the members.

After a most successful year, the Society shows a profit of £455, and the President expressed his keen appreciation of the ready assistance he had received from all his colleagues.

Mr. King forecast a still more successful year for 1938-39.

The Leeton Co-Operative Cannery propose to handle soft fruits during the coming season in the interests of their shareholders, and if the matter is handled in the same able way as the past season's cannery output, there is no reason to doubt the success of the undertaking.

The great importance of the campaign waged against the Red Scale pest during the past seasons is now most manifest on both ends of the Area. Fumigation, when thoroughly carried out at the correct period, has certainly proved its efficacy in combating this serious menace, and the quality and cleanliness of the Oranges being packed for the N.Z. export trade is most marked.

The Griffith Producers' Co-op. Co. have formed a special pool for any fruit which may still retain some dead scale through late fumigation, and all fruit thus affected will be kept separate, and be accounted for to those who send it in.

It will be necessary to subject this fruit to the pressure washing process, and therefore growers who unfortunately still have some fruit thus affected are advised to get it picked and cleaned early, while the fruit is still firm, and therefore not so likely to deteriorate as it will undoubtedly do later on in the season.

With concerted action among growers it is hoped that this serious pest will become scarcer each year, and all growers are advised to make the fumigation a regular cultural practice until this object is accomplished.

Light rains were recorded during the middle of the month, and although not heavy enough to do material good, yet were beneficial in the fact that the frosts were lighter and the temperatures milder from even the light fall.

### Seasonal Report from N.S.W.

#### Conditions Generally Good.

**D**URING THE LATTER PART of May dry conditions which had prevailed were relieved by good rains in the N.E. quarter, and by good average falls in the west and along the northern border. Conditions were generally mild for this period of the year.

**A**pples.—Harvesting of Apples is complete on the Northern Tableland, but packing for cold storage continues.

In the Orange district, mild weather with steady rains aggregating two inches were experienced in May. Bud development is good, both Jonathan and Granny Smiths showing well. It is stated that Apples and Pears in the local cool stores approximate 150,000 cases.

Budding is unsatisfactory at the present time in orchards around Bathurst.

In the Young district, there is a fair showing of buds on Jonathan, Rome Beauty and Delicious, but it is poor on Granny Smiths and moderate to light on other trees.

The last of the late-maturing Apples have been picked at Batlow. Approximately 1,000 cases of Granny Smiths and 150 cases of Democrats were exported during the month.

**P**ears.—Picking of Pears for cold storage is still in progress on the Northern Tableland. Budding is pleasing in the Orange district, but unsatisfactory around Bathurst.

In orchards at Young the showing of buds is fair on Williams, moderate on Packhams and patchy on other varieties.

Exports overseas from Batlow during May comprised 200 cases of Packhams, 30 of Winter Nelis, 97 Glou Morceau and 500 of other kinds.

**S**tone Fruit.—Generally, good bud development is apparent on stone fruit trees around Orange. At Bathurst, Cherry trees are budding moderately well, but Peach and Nectarine trees suffered to such an extent during the recent drought that it appears that they will be unable to make sufficient new growth for a satisfactory crop next season. While

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## ADVERTISING CLEARS SURPLUS APPLES.

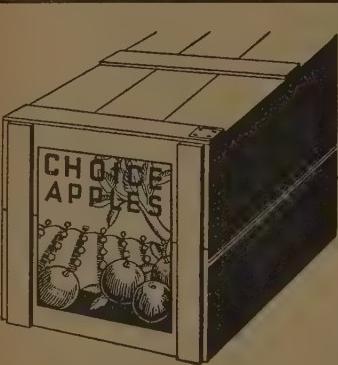
400,000 Cases at Cost of 1½d. Each.

A recent report contained in "Editor and Publisher," U.S.A. is forwarded to us by the Research and Development Department of the Melbourne "Herald," and states that in U.S.A. 400,000 cases of Apples had been sold by well-planned publicity, at a cost of three half-pence per case.

The campaign was promoted by the New Jersey Advertising Council and majored through 32 newspapers. So good a public response was reported that approval was given of an extension of the publicity campaign.

young Cherry trees in the Young district withstood the unfavorable weather fairly well, those of 20 years of age and upwards suffered severely; Burgdorffs and St. Margarets have a fair quantity of buds, but other varieties have only a poor showing. Budding on other trees is as follows:—Apricots fair, Plums fair to moderate, Nectarines fair to poor, Prunes good to moderate on some and poor on others.

Citrus.—Good rains were received throughout coastal groves towards the close of May, and the droughty conditions in the growing areas of the Central Western Slope were relieved to some extent by moderate falls. Particularly dry weather prevails in the far western irrigation areas, and rain is needed for cover crops.



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A GOOD PASTE  
CHEAP LABELS  
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THE BEST PASTE  
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**DAVIS 444**  
ADHESIVE

With this easy to use cold water paste the labels always stay on.

Obtainable from all Hardware,  
Paint and other Stores.

"SOMETHING NEW —

WATCH in our future issues for full information regarding the KARRYBETTA FRUIT TRAY, the KARRYBETTA FRUIT CASE and the BETTA PACK FRUIT STORAGE SHED.

## Canned Fruits News and Notes

The Total exports from Australia of Canned Fruits for the present season from January 1st to May 31st, is stated by the Canned Fruits Control Board as follows. The figures quoted represent cases of 2 doz. 30 oz. tins, or equivalent.

Country.	Apricots.	Peaches.	Pears.	Salad. apples.	Fruit	Pine-	Total
	Cases.	Cases.	Cases.	Cases.	Cases.	Cases.	Cases.
U.K. . . . .	100,495	375,877	261,235	255	9,182	—	747,044
N.Z. . . . .	5,254	13,264	1,495	—	1,311	—	21,324
Canada . . . .	3,319	11,610	425	1,014	20,683	—	37,951
East . . . . .	1,330	3,440	2,331	564	4	—	7,669
Misc. . . . .	445	735	1,010	57	58	—	2,305
Total . . . . .	110,843	404,926	266,496	1,890	31,238	—	815,393

This total compares with 731,505 cases shipped in the corresponding period last year, last year's figures varying as follows:—Apricots, 59,446 cases, Peaches 305,096 and Pears 343,856, the latter being the only decrease, at this date, in the present export season.

### CANADA WANTS INCREASED PREFERENCE IN THE BRITISH MARKET.

A move that is important to Australia, in view of the forthcoming reconsideration of the Ottawa Agreement, is reported in the May issue of the "Canadian Food Packer," which states that at the request of Mr. John A. Weese, President of the Canned Foods Association of Ontario, a memorandum has recently been submitted to the Government of Great Britain by the Empire Canners' Council of London, in an endeavor to secure a 20 per cent ad valorem preference in the United Kingdom market for canned Tomatoes.

The memorandum pointed out that canned vegetables other than Tomatoes, receive their preference, whereas Tomatoes only receive a 10 per cent. preference.

It is pointed out that the main sources of supply within the Empire are Canada and to a much lesser extent, the Channel Islands. Tomatoes are also packed in Australia and South Africa, but not in any great quantity so far as exports are concerned.

In 1934 British countries only supplied 24,937 cwt. or 3.36 per cent. of Great Britain's imports as against 720,361 cwt. imported from foreign countries. Although in 1937 the imports from Empire countries amounted to 213,244 cwt., imports from foreign countries totalled 962,994 cwt. and thus Empire countries only supplied 18.19 per cent.

Although the quantities from within the Empire have thus shown a wonderful increase the existing preference has not been sufficient to increase the imports from Empire countries to even 25 per cent. of the total.

The Empire Canners' Council stated in its memorandum that it was convinced that by raising the preference to the 20 per cent., the price need not be increased to the British consumer.

At the annual conference of the Fruitgrowers' Federation recently held in Sydney, the President, Mr. J. Heane, stated that radical changes were imminent following the investigation of the Royal Commission, and he hoped that the marketing of fruit would improve as a consequence. Solutions were carried, urging the establishment of a research station on the northern tablelands to enquire into chemical deficiency in soils, pest control and other matters aiming at the improvement of fruit.

The importance of encouraging the further development of the Empire Tomato canning industry was mentioned as in this way the British Isles may be assured of a constant source of supply free from any possible risk of sudden dislocation of trade due to disturbances in Europe.

It is sincerely hoped that this movement will bear fruit and that an even greater market will be opened up for the canners in Canada. One thing is definite, however, if we are to secure this increased preference, the greatest possible care must be taken to assure quality products being sent to the British market at all times.

The Empire Canners' Council has also requested that the British Government place a specific duty of 7/6 per cwt. on foreign canned fruit imported into Great Britain instead of the 15 per cent. ad valorem. This also, if carried through, would materially aid fruit canners not only in Canada, but also in Australia.

### ADULTERATED VICTORIAN JAM?

#### Criticism from Sydney.

"A considerable quantity of adulterated Victorian jam is seen on the Sydney market," said Mr. W. H. Allison, a Pure Foods Inspector, giving evidence before the Industrial Commission in Sydney recently inquiring into a claim for a new award made by Pure Food Inspectors.

He described visits to jam factories in which he found evidence of the use of Apples that had not been washed and fruit pulp that had fermented being washed and fruit pulp that had fermented being mixed with good pulp in a 50 per cent. proportion.

He stated also that a considerable quantity of adulterated jams was on the market, most of which he claimed came from Victoria. It was cheaper than the local jam, and though called Raspberry, he found that it contained as high as 83 per cent. of Apple and Plum pulp.

### BROADCAST ADVICE.

Pacific Potash Ltd., Sydney, have recently broadcast a series of talks to the man on the land through "B" class stations covering the M.I.A., and adjacent fruit-growing districts.

Two subjects are being dealt with at the moment, "The Nutrition of Fruit Trees" and "Crop Insurance for Potatoes." The talks have been prepared and recorded by Mr. G. de Vahl Davis, B.Sc. (Agr.), head of the company's research service.

A folder showing the itinerary is available from Pacific Potash Ltd., 1-7 Bent-street, Sydney.

"SOMETHING BETTER"

KARRYBETTA FRUIT TRAY, the BETTA PACK FRUIT STORAGE SHED.

# Export & Commercial News

## New Zealand Notes

Export Prospects Good — Anxiety as to Condition — Fruit Board Election — Advertising Campaign Successful — Australian Citrus Fruits Arrive — Orchard Notes.

(By Our Correspondent.)

**W**HAT AT FIRST APPEARED to be a doubtful overseas market now shows every indication of returning to shippers a very satisfactory average return. The old saying that "It is an ill wind that blows nobody any good" applies in connection with this year's markets. The very severe frosts experienced throughout the Continent and England in the Spring have, according to recent reports, done untold damage to the fruit growing industry, with the result that berry and stone fruits are in very short supply, thus creating a good demand for Apples from the Southern Hemisphere.

New Zealand exporters are still rather anxious regarding the condition of fruit. 1938 has been one of the wettest picking seasons experienced for many years, and most growers realise that their fruit is not in that hard keeping condition so essential for a satisfactory out-turn overseas. It is now anticipated that English market prices will harden until the end of the season, so the shipper of Sturmers and other late varieties should reap full benefit from the misfortune of the English grower.

With the close of the export season, growers' thoughts turn to matters political, and by that is meant not only national, but fruit politics. The elections for the Fruit Board, to be held in August, will quicken the interest in fruit marketing and fruit politics generally. An alteration has been made to the Fruit Control Act whereby the Otago and Canterbury districts will this year elect a member, making a Board of seven instead of six. The Canterbury district, which on the average is a very much smaller district than Otago, will this year hold the greater number of votes, only because the frost experienced in Otago early in the season eliminated quite a number of exporters from this year's business.

In Nelson the Chairman of the Board, Mr. H. E. Stephens, will retire, and although no announcement has been made of his opponent, it is anticipated that there will be an election. Mr. F. Firth retires in Auckland, and here again reports indicate an election.

The great virtue of these district elections is the interest which is immediately aroused in the export business of the industry. Even national politics are always more interesting in election year. During July, district conferences, both of the N.Z. Fruitgrowers' Federation and the Control Board, will be held throughout the fruit growing areas. It is reported that there are two hundred remits for consideration at these conferences, so it is not difficult to imagine that many of the subjects will be very lightly dealt with.

Twelve months ago we suggested that some rearrangement was necessary whereby the number of remits could be reduced very considerably, and the attention of the conference devoted to the really important subjects. It is time that this was regarded by the industry as an important matter, as year after year the conference are called upon to deal with

anything from 150 to 200 remits in the space of about twelve working hours. Some of the remits alone will take an hour apiece, particularly those dealing with the various phases of local marketing, now a vital question in the economy of the fruit industry.

Local market prices showed every indication of a substantial improvement in early June, but immediately they became generally known throughout the fruit districts, heavier quantities commenced to arrive on the market, with the net result that prices have dropped to the previous low levels. This will only be temporary, as most of this fruit is from orchard held stocks, which are rapidly going off in condition. Once the markets commence to rely on cool store stocks, a better price level can be maintained. The weather generally is all against fruit consumption.

The advertising campaign continues, but is being tapered off as the over-supply of fruit diminishes. Wonderful results have been secured from this campaign. A recipe book containing two hundred Apple recipes was advertised over the air at 3d. per copy, and in the first fortnight 15,000 copies were ordered by the public, so to cope with the demand 35,000 copies have not been printed. This is a good indication of the interest that is being created in fruit as a result of the advertising campaign. There is a lot more that can be done; only the fringe of the business has really been touched, but the fruit industry will have to face up to a substantial advertising allocation if the good work commenced by the Internal Marketing Department is to be continued.

Australian Oranges are now the prominent feature in the citrus trade. The early shipments have been released, and although the demand from the retail trade has rapidly absorbed the quantities available, the weather is entirely against the fruit retailer, and it can be anticipated that the early demand will be quickly satisfied. The Australian Navel Orange is very much appreciated by the New Zealand public, but price is a restrictive factor, average size Oranges being retailed at six for 1/-.

### Orchard Work.

Growers are mainly concentrating on the routine work necessary at this time of the year. Weather is not too favorable, and in another month's time the usual complaint of backward with pruning will be fairly general throughout the districts.

During the last two years a large number of orchardists have been bringing their spraying and cultivation equipment up to date. Already substantial orders have been placed in America for spray pumps, most of which are stationary outfits.

The high cost of labor caused by recent legislation has forced the commercial grower to the adoption of up-to-date machinery and methods. It would be interesting to know the capital expenditure of the fruit industry for packing shed equipment, spray pumps and implements during the past two years.

A number of growers are appreciating the advantages of Rotary Hoe

## Apple and Pear Export Control

### Draft Bill Receives Mixed Reception

#### Deferred Until December

**C**ONFERENCES of fruitgrowers' organisations have been held in the several Australian States to consider the proposed Apple and Pear Export Organisation Act.

It was understood that the Federal Ministry intended to put the Act through in the recent session in order that the new Board, with statutory powers, could operate in connection with the coming season's export.

Speaking on this subject at the Fruit Producers' Conference, held at Canberra on June 22, the Acting Minister for Commerce (Hon. A. G. Cameron), stated that the generally unsatisfactory condition of the Apple and Pear industry and the fact that financial assistance had been sought for several years had led to consideration of the position by the Agricultural Council. The powers provided in the draft Bill were practically the same as those included in the Acts of the five Boards now in existence.

The points with which a Board, when established, could dealt with were:—

1. Multiplicity of handlers of fruit in U.K., certain of whom, it was stated, traded in a manner detrimental to fully effective marketing.
2. Negotiations with shipping companies to obtain more satisfactory arrivals in U.K.
3. The question of regulation of forward selling.
4. Regulation of the U.K. market by an international body representative of U.K. growers and supplying countries.
5. Quotas.
6. Development of Continental markets.
7. Regulations as to varieties and standards.

The main reasons for the haste in bringing this matter forward were:

(1) The likelihood of imports into U.K. being regulated — because of Australia's efforts to retain a high duty on foreign imports into U.K., and regulation of foreign imports; also U.K. growers were seeking the regulation of imports. (2) The Government felt that if there were to be a Board at all it did not want to be responsible for another season's delay.

The desire of the Government was to render the most effective service to the industry: this could best be done by giving statutory powers to chosen representatives of the industry.

A summary of the Bill is as follows:

At the expiration of three years from the date of commencement of this Act, and at the expiration of each three years thereafter, the operations of this Board shall be reviewed by the Australian Agricultural Council

which shall report to the Commonwealth on the desirability of continuing the operations of the Board or of any amendment to the Constitution or functions of the Board.

#### Representation.

The Board shall consist of (a) one member to represent the Commonwealth Government; (b) representatives of growers of Apples and Pears thus: Tasmania (4), Victoria (2), Western Australia (2), South Australia, N.S.W. and Queensland one each; (c) four members to represent exporters of Apples and Pears from Australia, — one from each of the States of Victoria, Tasmania, South Australia and Western Australia. Provided that should the Government representative be selected from Queensland there shall be no representative on the Board of growers of Apples and Pears in the State of Queensland.

Members of the Board, other than the Government representative, shall hold office for a period of three years and shall be eligible for re-appointment.

#### Incorporation of Board.

The Board shall be a body corporate with perpetual succession and a common seal, and shall be capable of suing and being sued and of holding real and personal property.

#### Meetings.

The Chairman or any three members may at any time call a special meeting of the Board, provided such members represent more than one State.

At all meetings of the Board nine members shall form a quorum, and such members shall represent at least three States.

At any meeting of the Board the Chairman shall have a deliberative vote and, in the event of an equality of votes, the motion shall be regarded as lost.

#### Executive Committee.

There shall be an Executive Committee of the Board consisting of not more than six members of the Board who shall be elected by the Board in the month of July each year, and shall hold office for a period of twelve months from the date of their election. (Provision to be made for election of Chairman of Executive.)

The members of the Executive Committee shall represent at least the States of Tasmania, Victoria, South Australia and Western Australia.

In the election of the Executive Committee, the Board shall endeavour to provide, as far as possible, for the representation on the Executive Committee of the various interests represented on the Board.

At any meeting of the Executive Committee three members shall form a quorum.

At any meeting of the Executive Committee the Chairman shall have a deliberative vote and, in the event of an equality of votes, the motion shall be regarded as lost.

Until the election of an Executive Committee in the month of July in the year one thousand nine hundred and thirty-nine, the Executive Committee elected by the Board in the month of September, 1938, shall be the Executive Committee of the Australian Apple and Pear Board for the purposes of this Act.

cultivation, the small units of which are ideal for the averaged sized orchards. It is unfortunate that despite all the labor saving equipment now available, costs of production are rapidly increasing. Unless costs can be kept within bounds New Zealand will be unable to compete in the overseas markets without Government assistance.

**Overseas Representatives.**

The Board may appoint a person approved by the Minister to represent the Board overseas, and such other person or persons as the Board may decide.

If an officer of the Public Service of the Commonwealth is appointed as an officer of the Board, his service as an

officer of the Board shall, for the purpose of determining his existing and accruing rights, be taken into account as if it were service in the Public Service of the Commonwealth, and the Officers' Rights Declaration Act 1928-1933 shall apply to that officer in like manner as if this Act and section

were specified in the Schedule to that Act.

**Powers of the Board.**

The Board shall have power—

(a) To make recommendations to the Minister in relation to the making of regulations for the purpose of regulating the export of Apples and Pears from the Commonwealth.

(b) To make reports and suggestions to the Minister on such matters as the quality standards and grading of any particular class or kind of Apples and Pears to be exported from Australia.

(c) To advise or to make recommendations to the Minister regarding matters arising in connection with any export programme which it may, from time to time, be necessary to observe.

(d) To advise or make representations to the Minister or to any other authority on matters affecting the welfare of the industry.

(e) To co-opt any person or persons to attend such meetings of the Board as the Board determines.

(f) Either on its own behalf or in collaboration with any other Board or Authority, to undertake or to make arrangements for any act or thing which, in the opinion of the Board, is likely—

(i) to lead to the improvement of the quality of, or the prevention of deterioration before or during transport from Australia of Australian Apples or Pears, or

(ii) to expand existing markets, and to secure new markets for Australian Apples and Pears.

And such other powers as are conferred by this Act. Provided that nothing in this Act shall be regarded as empowering the Board to buy and sell fruit or to enter into trade in fruit.

**Export Control.**

For the purpose of enabling the Board effectively to control the export of Australian Apples and Pears the Governor-General may make regulations prohibiting the export from the Commonwealth of any Apples or Pears except by persons who hold licences issued on the recommendation of the Board by the Minister or by any person authorised thereto in writing by the Minister, and, in accordance with such conditions and restrictions as are prescribed after recommendation to the Minister by the Board.

Any person who exports Apples or Pears from the Commonwealth in contravention of the regulations made in pursuance of this section (including the prescribed conditions and restrictions) shall be guilty of an offence.

Should the Board for any reason decide to limit the quantity of fruit to be exported to any overseas market in any year, and in the event of the Board being unable to agree unanimously upon the allocation of any such quantity, the Board shall request the Minister to refer the matter to an independent arbitrator appointed by the Minister.

**Contracts.**

After such date as is notified in the Gazette by the Minister on the recom-



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mendation of the Board, a contract for—

- (a) The carriage by sea to any place beyond the Commonwealth of any Apples or Pears; or
- (b) The insurance against loss or deterioration of such Apples or Pears whilst awaiting transport or in transit or until disposed of;

shall not be made except by the Board acting as the agent of the owners of the Apples or Pears, or of other persons having authority to export them, or in conformity with conditions approved by the Board.

Every contract of the kind specified in the last preceding sub-section which is made otherwise than in accordance with this section shall be void.

The collector or other officer of Customs may require any person who, after the date notified by the Minister in pursuance of this section, exports any Apples or Pears from the Commonwealth, on making entry thereof under the Customs Act 1901-1936 and before the entry has been passed to satisfy him that the contract for the carriage of the Apples or Pears has been approved by the Board, and the Collector or other officer of Customs may decline to pass the entry until the person has so satisfied him.

This section shall apply, with the necessary modifications, to contracts made before the date notified in the Gazette in pursuance of sub-section (1) of this section (whether made before or after the commencement of this Act) in like manner as it applies to contracts made after that date.

#### Use of Funds.

There shall be an Apple and Pear Export Fund into which shall be paid, out of the Consolidated Revenue Fund, which is hereby appropriated accordingly all moneys received by the prescribed officers under the Apple and Pear Export Charges Act 1938.

The moneys paid into the fund shall be applied by the Board:—

- (a) in payment of the expenses and other charges incurred by the Board.
- (b) salaries and allowances.
- (c) in doing or undertaking any Act, matter or thing which, in the opinion of the Board, is likely to improve the quality or to promote the sale of Australian Apples and Pears and in particular in carrying out any arrangement which the Board may enter into with any other Board or authority constituted to extend the sale of products of Australia.

#### Furnishing Information.

The Board may call upon any person to furnish, within such time as is specified by the Board, such returns and information in relation to the Apple and Pear industry or to Apples or Pears owned by him or under his control, as are necessary for the purposes of carrying out this Act.

Any person who, being called upon in pursuance of this section to furnish any return or information in relation to any matter within his knowledge or under his control, fails to furnish the return or information within the time specified shall be guilty of an offence.

Penalty: Not exceeding one hundred pounds.

#### Regulations.

The Governor-General may make regulations, not inconsistent with this Act, prescribing all matters which by this Act are required or permitted to be prescribed, or which are necessary or convenient to be prescribed, for carrying out or giving effect to

this Act, and in particular for prescribing penalties not exceeding fifty pounds for any breach of the regulations other than a breach for which a penalty is prescribed by this Act.

**Apple and Pear Export Charges Act 1938:** It was agreed that the maximum levy to be provided under this Act should be three farthings per case. The Board then has power to recommend the issue of regulations prescribing any rate of levy (according to its requirements) not exceeding three farthings a case.

... : : :

FROM MANY QUARTERS regret was expressed that the Bill was so hurriedly presented to the industry. It was pointed out in all the States that on a matter of major importance it would have been better for longer time for consideration of the Bill by growers and associations. Doubtless the Federal Government had special reasons for speedily pushing on with the measure, including the effect of international reactions and the need for a statutory body to effectively control exports.

After all this appears to be the heart of the Bill. The Control Board when appointed would have no power to trade, in which respect this Bill differs from the 1929 Act, which was duly passed through Parliament but rejected on a vote of the growers.

The power to control exports under the present proposed legislation is through licences to be issued to exporters.

The summary of the proposed Bill is that the Control Board, when appointed would in reality be the present Australian Apple and Pear Council with statutory powers (though there would be a different basis of representation).

A special meeting of the Executive of the Australian Apple and Pear Council. Here again regret was expressed that the Council had not been consulted, as against which it was pointed out that this matter was essentially one for consideration by the constituent member bodies of the Council in the several States, and other bodies which might also be conveniently consulted.

The conference of growers convened by the Minister for Commerce was held at Canberra on June 22, when general approval of the Bill appeared to be given, and there was an understanding that the delegates would take back to their respective States the Draft Bill as amended for immediate acceptance so that the measure could be put through Parliament and become operative for the 1939 export season.

Strong opposition, however, developed in Tasmania and the State Fruit Board carried a resolution opposing the Bill, on several grounds, one of which was that certain powers were retained by the Government instead of being vested in the Control Board. Further, Tasmania desires a poll of the growers on the general principle of the measure. It is understood that the Acting Minister for Commerce (Mr. Cameron) intends visiting Tasmania shortly to answer objections of this nature.

Questioned by a representative of the "Fruit World" as to the general impression of the growers' conference at Canberra, delegates stated they were impressed with evidences of the sincere desire of the Federal Ministry to assist the industry, the Government being convinced that by conferring the statutory powers as set out in the Bill would be the most

effective service which could be rendered at this stage.

HERE IS DIVISION of opinion among the States as to the powers for review after three years. Victoria and Tasmania believe that the power to review the Control Board operations as to continuance for a further period should be vested in the growers' associations in the several States, whereas others agree with the wording of the proposed Bill, which provides for review after three years by the Commonwealth Agricultural Council.

Among some sections of growers in Victoria there is opposition to the principle of the Bill, and it is understood that Federal Members have been advised accordingly. It remains to be seen whether after quiet consideration, in the absence of any rush, the objections can be overcome.

On one point, however, Victoria is absolutely united, and that is in regard to the powers of review after three years. Victoria is in agreement with Tasmania that this power of review should be left with approved growers' associations, and not be in the hands of the Agricultural Council.

It is now officially announced that the Government has abandoned its intention to introduce the Apple and Pear Export Control legislation this session, but it is anticipated the legislation will be enacted in December next, and that the control will operate in respect of the 1940 export season.

The Acting Minister for Commerce (Mr. Cameron) has announced his intention to visit Tasmania in mid July to meet growers relative to the proposed Bill.



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## OBITUARY

Mr. A. J. Cooper, who died on June 9 at the Masonic Hospital, Ashfield, after a long illness, at the age of 57, was one of the pioneers of the selling side of the fruit industry, and first commenced business as a fruit agent in 1893 in the Old Fruit Exchange Building. He was later joined by his brother, Mr. E. A. Cooper, who continued with him for a number of years, but was finally compelled to retire owing to ill health.



The late Mr. A. J. Cooper.

During this period the firm branched out into the importation of Italian and Spanish citrus fruits, in which a large business was built up. When the embargo was placed on the importation of Italian fruits, Mr. Cooper decided to specialise in the consignment side of the business, and this policy has been followed ever since. In 1923 he was joined by his eldest son, Mr. A. C. Cooper, who after thorough training, took over the management of the business, whilst his father left on a world tour.

In 1937, owing to ill health, Mr. Cooper retired and in June of 1938 the business was floated into a proprietary company under the name of A. J. Cooper Pty. Limited. The direction of the new company is in the capable hands of Messrs. A. C. and E. W. Cooper, who managed their father's business for so long, and the same efficient staff is employed. Growers may look forward therefore to a continuance of that high-class service which the late Mr. A. J. Cooper has given them for the past 45 years.

Mr. Cooper was one of the most prominent and best-known men in the public life of the trade, and was held in the highest esteem by all connected with it. He was a keen worker for the betterment of trade conditions generally, and a fearless speaker. Many benefits that the trade now enjoy have been due to his untiring efforts.

During his long association with the fruit industry, Mr. Cooper has held many prominent positions. In 1923-24 he was Chairman of the Fruit Section of the Chamber of Commerce, of which he was the founder, and in the same years, Chairman of the Fruit Merchant's Association. He was also a member of the Tasmanian Associated Selected Agents and held the position of President of this Association over a period of ten years.

Mr. Cooper was also a recognised cool storage expert, and was the first

to cool store fruit on a commercial basis. This venture, which proved an outstanding success, was undertaken in Hobart, the fruit being stored in the old markets, which were converted to cool stores. Mr. Cooper was the fruit adviser to the Sydney Cold Stores.

He is survived by Mrs. Cooper and three sons, Alfred Charles, Dr. John Huon, and Eric William.

### N.S.W. CELERY TO THE EAST.

#### Trial Shipment to Singapore.

To test the reception of N.S.W. Celery in the Eastern market a small shipment was made during May. Should it return a fair price, further arrangements will be made to exploit the Singapore market with regular shipments.

The Celery was specially harvested and trimmed in accordance with the latest American methods as suggested by Mr. John Douglas, Agricultural Instructor, following his recent return from U.S.A., and reports are awaited as to its landing condition and reception at Singapore. Mr. Alan Redman, of Mona Vale, supplied the trial shipment, and it is believed in Sydney that their closer proximity than that of Adelaide, to Singapore, should favor N.S.W. growers in supplying this market.

### VICTORIAN APPLES AND PEARS IN LONDON.

Prices Better Than U.S.A. and Canada.

SEVERAL REPORTS recently released by the Department of Agriculture reveal satisfactory landings of recent shipments of Apples and Pears in London. The "Orion" shipment of Pears opened up in a green hard condition with only a few in a forward condition. The shipment included Beurre-Bosc, Packham, Marie Louise, Howell, Beurre Hardy and Glou Morceau. The prices received included Packham, 12/- to 16/-; Hardy, 14/- to 16/-; Beurre Bosc, 12/- to 15/-; and Howell, 10/- to 12/-.

Apples landed in fair quality with a little russet. Prices included Dunns, 8/- to 9/3; Cleos, 9/6 to 10/6; Jonathan, 7/3 to 9/-; Alfriston, 7/9 to 8/9; London Pippin, 8/- to 9/3; Cox's Orange Pippin, 8/6 to 11/3, and Grannies 11/6 to 12/-. The "Orion" landed 4,318 cases. "Moreton Bay" landed 3,706 cases Victorian Apples and 9,555 cases Pears all in satisfactory condition.

The "Essex" shipment, landed at Liverpool, arrived simultaneously with U.S.A.; and Canadian shipments and Victorian fruits returned slightly better prices.

A report from Glasgow states that prices received compared favorably with those reported from London. "Perthshire" and "Idomeneus" shipments opened up well in both quality and pack with a proportion of undersized fruit. Western Australian samples were not up to their usual standard, Jonathans being immature and Cleos showing some bitter pit.

"Tuscan Star" carried 11,877 cases Apples and 4,504 cases Pears for London and 2,808 and 10,500 cases respectively for Liverpool. All were reported to have landed in good condition and with a bright and attractive appearance.

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BRISBANE

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Harcourt Fruit Supply Co. Ltd.  
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.  
New South Wales: Griffith Producers' Co-op. Co. Ltd.  
Batlow Packing House Co-op. Soc. Ltd.

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## Growers—

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Chamber of Fruit and Vegetable Industries.

List of Members:—

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Associated Growers'	W. H. Southcott.
Selling Agency.	P. G. Stevens & Son.
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W. E. Bromley.	Sam Vick & Co.
Fred Chilton.	Trather & Hall.
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Hie Lee & Co.	Wilson Bros.
John Jenkins.	Ward & Felton.
J. W. Kirkwood.	Watkins & Evans.
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F. H. G. Rogers.	Yooksui Bros.
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P. S. MACDERMOTT,  
General Secretary,  
215a Thomas St., Haymarket, Sydney.

**Export Control Bill**

Strong Opposition in Tasmania.

**T**HE TASMANIAN STATE FRUIT Board, at a special meeting on June 27, to consider the proposed Apple and Pear Export Control Bill, strongly opposed the legislation.

The delegates to the Canberra Conference, Messrs. D. E. Ryan and R. W. Thompson, reported fully on all that had transpired there.

The greater part of the day was taken up in the discussion on the motion of Messrs. J. R. Abel and T. Burnaby, it was decided:

That the Board is strongly against the proposed Apple and Pear Export Control Board. In fairness to growers, who have to accept all financial responsibility and who contribute approximately 56 per cent. of the total export of Apples and Pears from Australia, this Board insists that a poll of fruitgrowers be taken before the Bill is submitted to Parliament. That this resolution be telegraphed to the Acting Minister for Commerce, and Tasmanian members of the Federal Parliament.

The following reasons for the Board's decision were sent to the Acting Minister for Commerce by letter-gran.

The Bill confers all powers on the Government and the Federal Agricultural Council, and none on the Board.

The Bill should have been submitted to the growers of Australia before being placed before Parliament, and has been rushed unduly.

The appointment of a representative in the United Kingdom should be made absolutely by the Board.

The proposed marketing clause is not acceptable to Tasmania.

This Board does not agree with the proposal that after a definite period the Act be referred to the Agricultural Council for review.

Tasmania's dominating position in the Apple and Pear export trade is not safeguarded.

The Control Board does not accept any financial responsibility.

State organisations' finances are not safeguarded in the Bill.

... :: :: ::

Expressions of opinion from well-known growers confirm the action of the Tasmanian State Fruit Board in opposing the Control Board legislation.

Mr. A. G. Shields (Huonville) considered the proposed Tasmanian representation to be inadequate. This view was shared by Mr. C. L. Ivey (Cygnet). Mr. O. R. Scott (Geeveston) insisted that a poll of the growers was essential. Mr. L. T. Barwick (Cradoc) said the Bill had been unduly rushed: a referendum was necessary. Certainly the proposed review by the Agricultural Council was not to be tolerated.

**AUSTRALIAN DRIED FRUITS SALES IN GREAT BRITAIN.**

The Commonwealth Dried Fruits Export Control Board reports steady demand for Australian Dried Fruits in Great Britain, sales registered during the week ending June 30 being 1,249 tons. The average price for 542 tons of Sultanas was £38/15/4, while 497 tons of Currants sold at an average of £27/3/8 per ton. The Spanish situation is reflected in the stronger demand for Lexias, of which 210 tons were taken by the trade at an average price of £45/10/4 per ton. The quality is appreciated as being the highest for some years and values are standing up in the face of the generally low prices of commodities.

**New Zealand Cherry Embargo**

Move to Lift Restrictions.

**A** DEPUTATION from the Young Co-operative Fruitgrowers' Society recently waited upon their local member, Mr. Collins, to urge that the Commonwealth Government negotiate with the Government of New Zealand with a view to the lifting of the embargo on Cherries and other fresh fruit into New Zealand. Alternatively, that a bounty on Cherries exported to the Dominion be granted by the Commonwealth.

It was pointed out that several varieties of Cherries suitable for the New Zealand trade were available in New South Wales, and unless our outlet overseas was available, the local market would become glutted. Fruit Fly is unknown in New South Wales Cherries and therefore the protection against its introduction into New Zealand from this fruit is unnecessary.

In reply, Mr. Collins stated that whereas the embargo on fresh fruits was made because of fear of Fruit Fly infection, the reasons for a continuance of the embargo had now become an economic one. The Commonwealth Government is considering the subject of fresh fruit exports to New Zealand, and is negotiating upon the matter of reciprocal trade negotiations, and would place Cherries on the list for further consideration.

**ENGLISH FRUIT CROP.****Details of Frost Damage.**

Mr. G. A. W. Pope, general manager of the South Australian Government Produce Department, sends the following extracts (airmail, London, 17/6/38), from the Trade Commissioner, Sir Chas. McCann.

After weeks of anxiety caused by the drought and later by frosts, when thousands of gallons of oil were burned each night during May in an endeavor to save crops, the full story of the damage is now being made available, and it is obvious that all types of fruits will be affected.

Strawberries, Plums, Gooseberries, Raspberries, Apples, Pears and Currants, have all been affected, and so far as early Strawberries are concerned, it is expected that a quarter crop can be anticipated; later varieties will be 60/90 per cent. of a normal crop.

One of the largest districts estimates that the 1938 crop of Strawberries will not exceed the low record of 1927, when 1,402,876 chips were put on rail.

Plums are expected to realise from a quarter to half a normal crop, but in many orchards here growers will not put the ladders against the trees. Gooseberries will be a poor crop, approximately 20 per cent. of a normal season.

Dessert varieties of Apples seem to have fared better than cookers, but it is still too early to forecast what the position will be.

Scottish Raspberry prospects seem to point to little prospect of even half a crop. As against this news, values according to the trade, are expected to be on a par with the heavy years of 1934 and 1936, but of course, time is the factor and the reaction of the trade to the industry will only be known when it becomes possible to gauge how demand reacts to supply.

**NEW REGISTRATION.**

MOSLEY, RAY, 41 City Fruit Markets, Sydney, wholesale fruit and vegetable distributor. Com. 7/3/38. Proprs.: Raymond Mosley and Henry G. Webster. Reg. 31/5/38.

**NAILING MACHINES**

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Illustration shows our latest model 6 track machine. An economical unit for making up, including centre board nailing.

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Fruit Importers and Salesmen****Herbert Wilson Pty. Ltd.**

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Accredited Agents for Victorian Central Citrus Association  
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**VICTORIA.**

Melbourne (4/7/38): Quotations (bushel case, unless stated):—Apples, eating, Del., 5/- to 8/-, few higher; Jon., 5/- to 8/-, few higher; other varieties, 5/- to 7/-; cooking, 3/- to 7/-, few higher. Oranges: Navels, 4/- to 8/-, according to counts, few special and wrapped lines to 10/-, few higher; common Oranges, 4/- to 6/-. Lemons: Average standards, 4/- to 6/-, good standards to 7/- and 8/-, few special higher. Grapefruit, 5/- to 8/-, few special and wrapped lines higher; Mandarins, 5/- to 9/-, few special lines higher. Pears: Dessert, 5/- to 8/-, few higher; culinary, 3/- to 5/-. Papaws, Queensland, 8/- to 12/- double case. Bananas: Queensland, 6's 10/- to 12/-, 7's 12/- to 14/-, 8's and 9's 14/- to 16/- double case, few special higher. Pineapples: Queensland, 7/- to 9/- double case, few higher. Passionfruit, 8/- to 12/- half case, few higher. Tomatoes, 12/- to 20/-, few higher; West Australian, 9/- to 11/- half case. Celery (Adelaide), 7/- to 10/- double case. Custard Apples, 4/- to 6/- half case.

**SOUTH AUSTRALIA.**

Adelaide (1/7/38). — Apples: G.S. 6/- case, Jons. 5/-, Cleos. 4/-, Romes 3/-, Londons 3/-, Del. 7/-; Bananas, 23/- to 25/- case; Lemons 5/- to 6/-; Oranges (Common) 4/- to 5/-, do. (Mandarin) 10/-, do. (Navel) 6/- to 7/-, do. (Poorman) 5/-; Grapefruit 6/-; Passionfruit 14/- to 15/- half case; Pears (eating) 6/- to 9/- case; Persimmons 7/-; Pineapples 14/-.

**WESTERN AUSTRALIA.**

Perth (1/7/38). — Apples: Jon. dumps, plain 5/- to 6/-, fancy 7/- to 9/6, ex. fancy 10/- to 11/-; Dunn's 4/- to 5/-, 6/- to 7/-, 7/6 to 8/-; R.B.

4/- to 5/-, 5/- to 6/6, 7/- to 8/-; Yates 4/- to 6/-, 7/- to 9/-, 9/6 to 12/6; G. Smith 5/- to 6/-, 6/6 to 9/-, 9/6 to 10/-; Cleo. 4/- to 5/-, 5/- to 7/6, 8/-; Rokewood, fancy 5/-, ex. fancy 6/6; Del. fancy 7/- to 10/-, ex. fancy 10/6 to 11/-; Citrus: Navels, flats 2/- to 6/- (special to 7/6); dumps 4/- to 8/- (specials to 8/8); Lemons 1/6 to 4/6, special to 5/- (others from 1/-); Mandarins 4/- to 9/6 (specials to 11/-). Other lines: Pears, Packhams, flats 4/- to 6/-; Tomatoes, local 4/- to 15/- (inferior from 1/6), ex. Geraldton 5/- to 18/9.

**QUEENSLAND.**

Brisbane.—Messrs. W. Arkell & Sons, writing under date June 27, state:—We beg to advise the following sales this week: Apples: Jon., 7/- to 9/-; Del., 8/- to 10/-; G.S. 8/- to 10/-; S.T.P., 6/- to 8/-; Dem., 6/- to 8/-; other varieties, 5/- to 8/-; Pear: W.C., 10/- to 13/-; G.S. 8/- to 11/-; Oranges: 4/- to 7/-; Navels, 6/- to 8/-; Lemons: 6/- to 8/-. The Tasmanian steamer last week carried choice fruit and mostly sold at above prices. The cause of a slight fall in values was the quantity of Apples forwarded here from the Sydney markets. This generally occurs when prices rise here, and has the effect of spoiling a good market.

Brisbane (18/6/38). — Messrs. Clark and Jesser report as follows:—During the past fortnight the heavy supplies of Apples have considerably eased off, and there has been a substantial increase in values. Ruling prices at present are:—Apples: Jons., 2/- to 21/2, 9/- to 10/-, smaller sizes 7/- to 8/-; Rome Beauty, 7/- to 8/-; other varieties, 7/- to 8/-; G.S., 9/- to 10/-. Pears: W.C. best sizes, 13/- to 14/-, small sizes 9/- to 10/-; W.N. and Jos., 11/- to 12/-; Packhams, 8/- to 10/-; Beurre Bosse, 7/- to 8/-; 4/- to 6/6, G.S. 5/- to 6/6, Tasmas 4/-.

Oranges: Common, 6/- to 7/-; Navels, 7/6 to 8/6. Mandarins: Very plentiful, 4/- to 6/-. Lemons: 10/- to 12/-. Custard Apples: 3/- to 3/6. Tomatoes: 9/- to 10/-. Bananas: green, 15/- to 18/- case. Pineapples: 4/- to 5/- case.

**NEW ZEALAND.**

Dunedin (24/6/38). — Messrs. Reilly's Central Produce Mart Ltd. report as follows:—During the week business has been quiet. Smaller supplies of Apples and Pears are being received. Consignments from Nelson have fallen off considerably, and for first-grade lines there is a slightly better enquiry. Tree-ripened Jonathans have an enquiry and are bringing satisfactory values. Dessert Pears are now in better demand.

Sales of Oranges have been steady, but sufficient are still available for the present demand, and until the arrival of the "Waitaki." This boat is due on July 5, with a further shipment of South Australian Oranges and Mandarins.

A small shipment of Pineapples arrived by the "Waikouaiti," and met with a satisfactory demand. Owing to the colder weather sales of ripe Bananas have been restricted. A small shipment of Samoans ex the "Matua" came to hand in good condition.

Fairly heavy consignments of N.Z. grown Lemons and Marmalade Oranges are available.

Prices (Per Case): Cal. Lemons 60/-, N.Z. Lemons 14/- to 16/-, Island Oranges 13/- to 19/-, S. Aust. Navels 14/- to 21/-, Cal. 25/- to 27/6, Mandarins 22/6, Queensland Pineapples 20/- to 24/-. Bananas, ripe, 17/6. Apples: Jon., choice 8/- to 10/6, Del. 4/- to 6/6, G.S. 5/- to 6/6, Tasmas 4/-.

to 6/-, Sturmers 4/6 to 7/-, cooking Apples 8/- to 5/-. Pears: W.C. 4/- to 6/-, W.N. 4/- to 6/-, P. Barry 5/- to 6/-.

**N.S.W. CITRUS GROWERS' DEFENCE ASSOCIATION.**

At a meeting of the Executive of the N.S.W. Citrus Growers' Defence Association on June 4, Mr. W. J. Black, presiding. It was decided to write direct to the N.Z. Government requesting the lifting of the embargo on Mandarins during the months of June to September.

Although opposed in general principle to bounties, it was decided, in view of the advantage to local markets for citrus to be exported, to support the citrus export bounty.

Objection was taken to the suggestion by Mr. H. M. McKay, Tasmanian Government Officer, before the Fruit Enquiry Commission, that there should be control over the production and distribution of fruit.

Strong support was given to the proposal for reverting to the previous marketing hours at the City Markets, Sydney, viz., 6 a.m. for vegetable markets and 7 a.m. for the fruit markets. A resolution on these lines was carried, also congratulating the City Council on its decision to open the vegetable markets half an hour earlier than has been the case recently.

**IMPERIAL FRUIT SHOW.**

October-November, 1938.

**E**NTRIES FROM AUSTRALIA for the Imperial Fruit Show and Canners' Exhibition, to be held at the Coliseum, Bristol, England, from October 28 to November 5, 1938, close with the Commonwealth Department of Commerce, Canberra, on August 28. As usual, this will be the greatest show of Empire fruit conducted in the British Empire.

The classes provided for Empire competition include Navel Oranges, Grapefruit and Lemons, which will be judged in London during July, and the remainder of the classes, which will be judged at the Show at Bristol. There will be no overseas Apple packing competition this year, this section being restricted to United Kingdom competitors.

The British Empire Section included the following:—10 boxes any dessert Apple, 10 boxes any culinary Apple, 5 boxes Navel Oranges, 5 boxes Grapefruit, 5 boxes Lemons, 5 boxes late Valencias and 5 boxes any variety Oranges. Gold, silver and bronze medals as well as cash prizes are offered.

A window dressing competition for shops in the Bristol district will be held during the show week.

In the Canned Fruits Section, open to canners in any part of the British Empire, every variety of canned fruits are provided for, and medals and diplomas are granted in each section.

**MUSHROOMS BY 'PLANE.**

Welcomed at Sydney.

A report in June stated that Mushrooms and Strawberries rushed from Tasmania to Sydney by 'plane realised prices that gave satisfactory returns to growers and were well received by Sydney buyers. Mushrooms realised as high as 2/6 per lb.

This opens up prospects for growers at long distance from the principal markets to get their products on the markets with some regularity and ease. Naturally only products which pack into small space can be accommodated by this ultra-modern distribution. It is predicted that Tasmania will use the plane for her surplus berry fruits.

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Fruit Merchants and Exporters of SOUTH AUSTRALIA*

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The Adelaide Market.

# Poultry Notes

## SELECTION OF BREEDING BIRDS.

### The Importance of Physique.

While the matter of selecting birds for their productive capacity is also important, it is apparent that we have reached the stage when this factor must not be regarded as more essential than the physique of the birds, writes the Poultry Expert of the N.S.W. Department of Agriculture in current notes. For many years now, poultry farmers have been striving to improve egg production, but, judging by the performances of birds in our laying competitions, it would appear that not only is production not increasing, but there is a downward tendency.

There is no doubt that this has been brought about by too much reliance being placed upon egg production pedigree in the choosing of breeding stock without due regard being given to the all-important factors of physique and stamina; and while it is not suggested that high producers should not be used in the breeding pens, it is desired to stress the necessity for selecting robust birds in order to breed more virile chickens which will stand up to the strain of high production.

It is more essential to make a rigid selection for the breeding pens amongst stock bred from high producers than from untested stock, because it is usually found that abnormal layers do not produce chickens as strong as those laying fewer eggs, and if the progeny of these high producers are not selected for good physique, it cannot be expected that they, in their turn, will produce good layers.

Hence the advice to choose birds showing good constitutional vigor regardless of whether they have production pedigrees, but in doing so, due weight should be given to laying characteristics, as indicated by a bright alert appearance, bold eyes, smooth face, reasonably fine skull and medium texture of comb and wattles. By following along these lines, the other extreme of using birds of excessive coarseness, and consequently low production, will be avoided.

Other desirable points to keep in mind in the selection of breeding birds are good depth and width of body in conformity with the type of the breed, and avoidance of too close relationships; in fact, it is better to introduce new blood frequently rather than closely inbred.

There is a feeling among poultry farmers that there is a risk of reducing production by bringing in new blood from time to time, but, provided the birds purchased are similar in type and character to those with which they are to be mated, there is less risk in "out-crossing" than in mating, indiscriminately, birds of which the relationship is not known.

## HOUSING BIRDS IN WINTER.

AT THIS SEASON of the year poultry flocks are more prone to develop colds than at other periods. A cold, if not checked, may develop into roup, which is very contagious, and may cause the loss of valuable birds. Colds may be prevented by avoiding overcrowding by housing the birds in well-ventilated houses, free from draughts and damp.

Many poultrykeepers house a few layers on the intensive system in the Winter where the birds are kept under cover the floor being covered with dry, clean, scratching litter, and all grain fed is thrown in this, so as to provide the birds with exercise. If

colds do break out, denoted by running at the eyes and a rasping breath, the ailing birds should be isolated. All should be dosed with Epsom salts in the mash and the drinking water for the whole flock should be medicated with permanganate of potash, until it is pinkish in color.

Sometimes a tonic at this time of the year is a good preventive of colds and one of the proprietary tonics may be used with good effect.

### A GOOD LAYER.

The skull of a good layer is fine in tone, yet deep; her beak is short and blunt; the eye is large, bold, fully round, and set high in the side of the face, which is flat, fine and level. The comb and wattles are large, rosy-red, warm and fine textured. The body is deep from shoulder to breast bone. The sides of the body bulge outwards. The breastbone slopes downwards. The plumage is tightly held to the body, short, close and dry. The tail is held high.

The wings are held high and close to the sides of the body. The legs, as the bird walks, are carried wide apart and parallel to one another. The legs are fine in bone and have small scales. The toes are straight and short, and the pads firmly placed on the ground. The pelvic bones are straight and thin and not covered with an excess of fat. The abdomen is large, deep broad, well expanded and soft to the touch. The skin is soft, loose, thin and silky. The vent is large, soft, smooth and moist.

### BENEFITS OF EARLY HATCHING.

#### Start Should be Made by Beginning of July.

Those who have had experience with late hatched chickens will require no advice regarding the benefits to be derived from hatching early in the season, observes the Poultry Expert of the Department of Agriculture in current notes, but there are still many who are inclined to leave hatching till about the middle of the season, on account of the early birds moulting during the Autumn. It is only necessary to see the numbers of late hatched unthrifty chickens on the

## PREPARING PIGS FOR SHOW.

Agricultural shows can be classed as the "show window" of the farmer for it is here that breeding, quality, management and so forth are seen in results. A great deal of knowledge can be attained by the ambitious breeder from visiting the show pens and comparing the various exhibits to be seen. The preparation of the exhibits is an important part of the grower's work, and a writer in N.S.W. Agricultural Notes recently gave some good advice along these lines.

Pigs for exhibition require to be well fed, but should not be overfat, as this seriously affects them afterwards as satisfactory breeders. They should be well exercised daily, and handled carefully, so that when being paraded before the judge they are tractable and easily handled, and may be shown to advantage. All pigs should be paraded to be properly seen; they cannot be seen to advantage while in pens. Many a good pig gives a bad account of itself through not being properly trained to submit to quiet handling. This, of course, takes time and patience, but it must be done if the best results are to be obtained.

For convenience in caring for and handling the show pigs, they should be kept by themselves and not allowed to run with the general herd. If possible, their exercise should be on a good green pasture, where ample clean drinking water and shade is provided.

After the pigs have been selected for the various classes in which it is intended to compete (it being quite a good idea to have one or two substitutes prepared in the younger classes, or bacon pig classes, in case

of accidents), the animals should be washed with warm water and soap, and after they have dried, a liberal dressing of oil should be applied, which will remove the scurf and dirt from the skin and hair. Old sump oil from cars may be used for black pigs. For red or white pigs apply some of the following mixture: — Fish oil 6 parts, benzine 1 part, kerosene 1 part.

This oil is preferably put on in the evening and not in the morning, in order to guard against the influence of the heat of the day. Several washings and applications of oil may be necessary, the object being first of all to get the skin and hair of the pig thoroughly clean, when the final touching up will give good results.

Before judging, the animals require grooming with an oily brush (cocoanut oil being used in this case), and not smothered with oil as is seen sometimes; and when this is carefully done, the animals will have that glossy, clean skin and hair which adds greatly to the appearance of the pig when paraded.

## PIGS IN PADDOCKS.

**T**HE RECOGNISED PRACTICE of the intensive penning system is giving way to the new system of grazing, states the "Queensland Producer."

The modern demand is for leaner pork and bacon, and the grazing pig supplies this need. Provided pigs are bred to the correct type they may be kept under grazing conditions until ready for slaughter, with very good results. The specially grown forage is generally cheaper than pig foods, also.

Under the intensive penning system the pigs often suffered through mineral deficiencies, but this is soon rectified when they are turned out to pasture.

In order to maintain a safe standard of hygiene it was also necessary to have well drained and constructed buildings and floors, which meant an additional amount of work. One of the most important features of a paddock piggery is that the only cleaning up necessary is the ploughing and planting of crops in rotation, and moving the sheds, and troughs, which should be built on skids to allow of easy transport. There is little, if any, difference in the cost of establishing a good paddock piggery and a good intensive piggery.

## SPECIAL NOTICE TO FRUITGROWERS

In response to numerous requests from growers for information as to who are members of the

**Wholesale Fruit Merchants' Association of Victoria**  
the following list is given. All are members of the above Association, and are registered firms carrying on business in the

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Correspondence is invited by the Association.

Office : 21 Wholesale Fruit Market,  
Queen Street, Melbourne. Phone F 4866.

## Sizing and Grading Apples

### South Australian and Tasmanian Methods Compared

DURING A RADIO BROADCAST in Adelaide recently, Mr. E. Leishman, District Agricultural Adviser, dealt with the above subject and discussed maturity, harvesting, packing, grading and labelling Apples for export. The hints regarding grading and sizing are given hereunder.

#### Grading and Sizing.

In large packing houses and a number of the smaller ones machinery is installed to size the fruit, and is recognised as an indispensable part of the packing equipment.

I had the opportunity recently to inspect a number of packing houses in Tasmania, where two types of sizing machines are favored. In one, the separation is determined by weight, and the other by the diameter of the fruit. Both types of machines appeared to give satisfaction. In one of the progressive packing houses I was impressed with the care and attention devoted to preventing any Apples under grade requirements reaching the packing bins. There were four

sorters on each side of the sorting table, and practically every Apple was handled.

Grading should not be confused with sizing, for the former cannot be done mechanically. To obtain efficient grading of the fruit, it is necessary to have skilled sorters, as this is one of the most important positions in the packing house.

Sizing machines of either type must be set as accurately as possible, so as the packers are able to place sufficient fruit in the box without bruising.

#### Packing and Wiring.

The usual system of packing adopted in this State is known as the "straight pack." This is the standard method of packing, and has been mostly practised since the inception of this standard box. The difficulty has been that the case when packed had either too much or too little "bulge." This has been principally due to the incorrect sizing of the fruit, and when placing the fruit in

the boxes a firm downward pressure is made all over the fruit after every layer, or no pressure at all throughout the pack. This results, in many instances after the last layer has been placed, that instead of having the required bulge, the top is practically flat. When too high, over pressing and dumping is necessary to fix the lids, and consequently bruising occurs. On the other hand, if the bulge is too low, complaints are made by the merchants overseas that the boxes are under the recognised weight.

To overcome this, and to keep up to the standard of our competitors, it has been necessary to revise the present method and encourage the "American Crown Pack."

The "Crown Pack" is very simple to the packers; it is not a case of learning a new method, but of breaking off old habits, particularly in regard to the pressure of fruits in the box.

It can be mastered by a few hours' practice. This pack is so named because the fruits are built up in the form of a "crown," the highest in each layer being in the centre of the box. The usual straight pack is adopted, and to obtain the "crown"

it is necessary to apply a firm downward pressure on the side Apples, in addition to those at the end of each layer, when placing the fruit in position.

The remaining fruits are placed without this pressure, which results in the gradual building of a "crown" throughout the pack. It is not necessary to select slightly smaller Apples for the end and side positions. The more even the sizing of the fruit the better the crown will be.

It is essential that efficient lidding presses should be used for nailing down the boxes in this or any other system of packing. Severe bruising will occur if the lids are nailed to the cases on the packer's bench. Slightly longer lids are necessary to allow for the bulge. A unitised lid is more conveniently applied to the case.

The wiring machine has proved an economical means of strapping cases. It makes the package more secure in transit and lessens the possibility of pilfering the fruit. The important points in wiring the case after lidding are to keep the wires close up to cleats and to have the correct tension on the wiring.

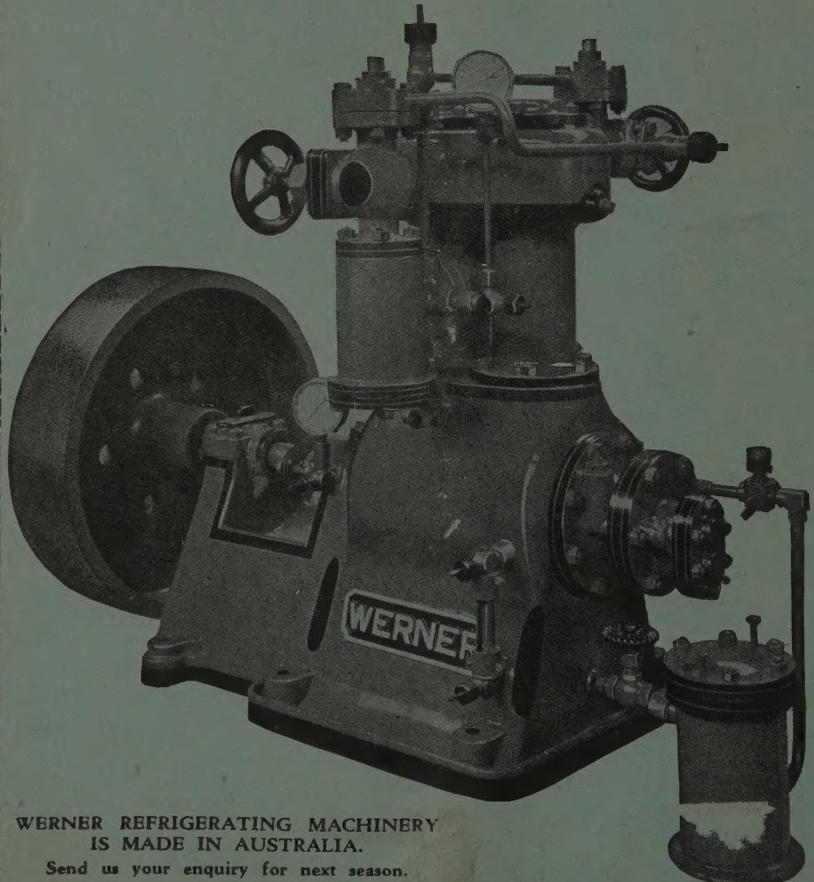
#### Labelling and Stencilling.

There is a number of attractively printed labels used, and a neat simple design is favored. Labels poorly applied to the box have a most unsightly appearance. Use the best quality paste. To prevent bubbles forming on the labels, before they are fixed to the box soak the labels in water prior to applying the paste. When using a rubber stamp on the labels to designate the variety and count, see that it is distinct and place neatly in the allotted space. The usual practice is to label the boxes before they are packed, sufficient time being allowed for the labels to dry, because they are liable to be defaced during handling.

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On receipt of the young trees from the nursery, they should be "heeled in" until planted in their permanent positions. Holes large enough to accommodate the trees without unduly bending their roots, and deep enough to hold them at about the same level as they stood in the nursery, are necessary. Large deep holes are not usually satisfactory. Spread the roots well and cover them with fine soil, which should be then very firmly compressed by tramping.

When planting is completed, severe pruning back is essential in order to restore an approximate balance between the top growth and the depleted root system. — (N.S.W. Agricultural Notes.)